

GOVT. POLYTECHNIC MAYURBHANJ LESSON PLAN- 2026-27 (WINTER)

Discipline : CIVIL ENGG.		Semester: 3rd	Name of the Teaching Faculty : DEBASISH PATRA	
Subject : TE		No. of Days / per week class allotted : 03	Semester From date : 01.07.2026 To Date : 05.11.2026	
MONTH	Week	Day	Unit	Topics
JULY	1st	2nd	UNIT-I	Overview of Highway Engineering
		5th		Role of transportation in the development of nation
		2nd		Scope and Importance of roads in India and its' Characteristics
		4th		Different modes of transportation – land way, waterway, airway. Merits and demerits of roadway and railway
		5th		General classification of roads
	2nd	2nd	UNIT-I	Selection and factors affecting road alignment
		4th		Geometric Design of Highway
		5th		Camber: Definition, purpose, types as per IRC – recommendations, Kerbs: Road margin, road formation, right of way
		2nd		Sight distance (SSD): Definition, types IRC – recommendations, simple numerical
		4th		Practice Questions
	3rd	2nd	UNIT-II	Curves: Necessity, types: Horizontal, vertical curves
		4th		Extra widening of roads: numerical examples
		5th		elevation
		1st		Problems on Super Elevation
		2nd		Standards cross-sections of national highway in embankment and cutting
	4th	4th	UNIT-III	Construction of Road Pavements
		5th		Types of road materials and their Tests – Test on aggregates-Flakiness and Elongation In- dex tests
		2nd		Angularly Number test, test on Bitumen- penetration, Ductility, Flash and Fire point test and Softening point test
		4th		Pavement – Definition, Types, Structural Components of pavement and their functions
		5th		Construction of WBM road. Merits and demerits of WBM & WMM road
AUGUST	5th	2nd	UNIT-III	Construction of Flexible pavement / Bituminous Road, Types of Bitumen and its proper- ties,
		4th		Emulsion, Cutback, Tar, Terms used in BR-prime coat, tack coat, seal coat, Merits andDemerits of BR
		5th		Cement concrete road -methods of construction, Alternate and Continuous Bay Method
		2nd		Construction joints, filler and sealers
		4th		Merits and demerits of concrete roads. Types of joints
	1st	5th	UNIT-III	Simple Numericals
		2nd		JHULANA PURNIMA
		4th		Basics of Railway Engineering
		5th		Classification of Indian Railways, zones of Indian Railways
		2nd		Permanent way: Ideal requirement, Components
		4th		Rail Gauge, types, factors affecting selection of a gauge
		5th		JANMASTAMI

SEPTEMBER	2nd	2nd	UNIT-IV	1st Internal Assessment
		4th		Rail, Rail Joints - requirements, types
		5th		Creep of rail: causes and prevention
	3rd	2nd		NUAKHAI
		4th		Sleepers - functions and Requirement, types - concrete sleepers and their density
		5th		Ballast - function and types, suitability
	4th	2nd		Rail fixtures and fastenings
		4th		Fish plate, spikes, bolts, keys
		5th		Bearing plates, chairs-types of anchors and anti- creepers
	5th	2nd		Track geometrics, Construction and Maintenance
OCTOBER	1st	4th	UNIT-V	Alignment- Factors governing rail alignment
		5th		Track Cross sections – standard cross section of single
				Double line in cutting and embankment
	2nd	2nd		Important terms-permanent land, formation width, side drains
		4th		Railway Track Geometrics: Gradient, curves- types and factors affecting,
		5th		Grade compensation, super elevation, limits of Super elevation on curves
	3rd	2nd		Cant deficiency, negative cant, coning of wheel, tilting of rail
		4th		Branching of Tracks, Points and crossings, Turn out- types, components, functions and inspection
		5th		Track junctions: crossovers, scissor cross over, diamond crossing, track triangle
	4th	2nd		VIJAYA DASHAMI
		4th		2nd Internal Assessment
		5th		Station -Purpose, requirement of railway station, important technical terms,
	5th	2nd		Types of rail- way station, factors affecting site selection for railway station
		4th		yards
		5th		Track Maintenance- Necessity, Classification, Tools required for track maintenance with their functions, Organisation of track maintenance, Duties of permanent way inspector, gangmate and key man
NOVEMBER	1st	2nd		Revision
		4th		PREVIOUS YEAR QUESTION DISCUSSION
		5th		PREVIOUS YEAR QUESTION DISCUSSION

Debarish H. area.
SUBJECT EXPERT(CIVIL)

HOD(CIVIL)
G.P,MAYURBHANJ

ACADEMIC CO-ORDINATOR
G.P,MAYURBHANJ