

GOVT. POLYTECHNIC MAYURBHANJ LESSON PLAN-2022/23(SUMMER)

Discipline : CIVIL ENGG.		Semester: 4th Sem		Name of the Teaching Faculty :DAMAYANTI PRADHAN
Subject : HIGHWAY ENGINEERING(Th.4)		per week class allotted : 05		Semester From date : 16.02.2022 to Date : 23.05.2022
Month	Week	Day	Unit	Topics
FEBRUARY	3rd	4th	UNIT-1	INTRODUCTION
		5th		1.1 Importance of Highway transportation: IRC, Ministry of Surface Transport, Central Road Research Institute.
	4th	1st		1.2 Functions of Indian Roads Congress
		2nd		1.3 IRC classification of roads
		3rd		1.4 Organisation of state highway department
		4th		Question Discussion
		5th		Question Discussion
	5th	1st	UNIT-2	Road Geometrics
		2nd		2.1 Terms used in geometric design and their importance.
				2.2 Design and average running speed, stopping and passing sight distance
MARCH	1st	3rd		2.3 Necessity of curves, horizontal and vertical curves including transition curves and super elevation, Methods of providing super – elevation.
		4th		QUESTION ANSWER DISCUSSION
		5th		Long type question Discussion
	2nd	1st	UNIT-3	Road Materials
		4th		3.1 Difference types of road materials in use: soil, aggregates, and binders
		5th		3.2 Function of soil as highway Subgrade
				3.3 California Bearing Ratio: methods of finding CBR valued in the laboratory and at site and their significance.
	4th	1st		3.4 Testing aggregates: Abrasion test, impact test, crushing strength test, water absorption test & soundness test.
		5th		QUESTION PRACTICE
	5th	1st	UNIT-4	DISCUSSION
		2nd		Road Pavements
		3rd		4.1 Flexible and rigid pavement, their merits and demerits, typical cross-sections, functions of various components Flexible pavements.
				4.2 Sub-grade preparation, equipment used for subgrade preparation.
				4.3 Sub base Course:Necessity of sub base, stabilized sub base, purpose of stabilization

APRIL	2nd	5th	UNIT-4	base, purpose of stabilization.
		1st		4.4 Preparation of base course, Brick soling, stone soling and metalling
		2nd		4.5 Surfacing:Surface dressing ,Premix carpet and Semi dense carpet ,Bituminous concrete, Grouting.
		3rd		4.6 Rigid Pavements: Concept of concrete roads as per IRC specifications
		4th		Hill Roads:
	3rd	1st	UNIT-5	5.1 Typical cross-sections showing all details of a typical hill road in
		2nd		5.2 Breast Walls, Retaining walls, different types of bends
		3rd		practice question answer
		4th		Road Drainage:
		5th		6.1 Necessity of road drainage work, cross drainage works.
	4th	1st	UNIT-6	6.2 Surface and sub-surface drains and storm water drains. Location, spacing and typical details of side drains, si embankment, typical cross sections.
		2nd		discussion
		3rd		Previous year question discussion
		4th		practice session
		5th		discussion
	5th	1st	UNIT-7	INTERNAL
		2nd		Road maintenance 7.1 Common types of road failures – their causes and remedies
		3rd		7.2 Maintenance of bituminous road such as patch work and resurfacing.
		4th		7.3 Maintenance of concrete roads – filling cracks, repairing joints, maintenance of shoulders (berm), maintenance of traffic control
		5th		7.4 Basic concept of traffic study, Traffic safety and traffic control signal
MAY	1st	1st	UNIT-8	Question Discussion
		2nd		Construction equipments:
		3rd		Preliminary ideas of the following plant and equipment:
		4th		8.1 Hot mixing plant
		5th		8.2 Tipper, tractors (wheel and crawler) scraper,bulldozer,dumpers, shovels, graders, roller dragline.
		1st		8.3 Asphalt mixer and tar boilers

	2nd	3rd		8.4 Road pavers
		4th		do
		5th		8.5 Modern construction equipments for roads.
	3rd	1st		Previous year question discussion
		2nd		Previous year question discussion
		3rd		Question Discussion
	4th	2nd		Class test

H.O.D
SIGNATURE

ACADEMIC COORDINATOR SIGNATURE

SUBJECT EXPERT SIGNATURE