

RKKAT POLYTECHNIC BALASORE LESSON PLAN-2023/24(SUMMER)					
Discipline : CIVIL ENGG.		Semester: 4th Sem		Name of the Teaching Faculty :SUKANTI JENA	
Subject : HIGHWAY ENGINEERING(Th.4)		per week class allotted : 05		Semester From date : 29.01.2024 to Date : 26.04.2024	
Month	Week	Day	Unit	Topics	
JANUARY	4th	1st	UNIT-1	INTRODUCTION	
		2nd		1.1 Importance of Highway transportation: IRC, Ministry of Surface Transport, Central Road Research Institute.	
		3rd		1.2 Functions of Indian Roads Congress	
FEBRUARY	1ST	4TH	UNIT-1	1.3 IRC classification of roads	
		2ND		1.4 Organisation of state highway department	
	2ND	3RD		Question Discussion	
		4TH	UNIT-2	Question Discussion	
		5TH		Road Geometrics	
	3RD	1ST		2.1 Terms used in geometric design and their importance.	
		2ND		2.2 Design and average running speed, stopping and passing sight distance	
	5TH	1ST		2.3 Necessity of curves, horizontal and vertical curves including transition curves and super elevation, Methods o f providing super –	
		1ST		QUESTION ANSWER DISCUSSION	
MARCH	2ND	3RD	UNIT-3	Long type question Discussion	
		4TH		Road Materials	
	3RD	1ST		3.1 Difference types of road materials in use: soil, aggregates, and binders	
		2ND		3.2 Function of soil as highway Subgrade	
		3RD		3.3 California Bearing Ratio: methods of finding CBR valued in the laboratory and at site and their significance.	
		4TH		3.4 Testing aggregates: Abrasion test, impact test, crushing strength test, water absorption test & soundness test.	
	4TH	1ST		QUESTION PRACTICE	
		2ND		DISCUSSION	

MARCH	3RD	5TH	UNIT-4	Road Pavements
				4.1 Flexible and rigid pavement, their merits and demerits, typical cross-sections, functions of various components Flexible pavements.
	4TH	1ST		4.2 Sub-grade preparation, equipment used for subgrade preparation.
		4TH		4.3 Sub base Course: Necessity of sub base, stabilized sub base, purpose of stabilization .
	5TH	4TH		4.4 Preparation of base course, Brick soling, stone soling and metalling
		5TH		4.5 Surfacing: Surface dressing , Premix carpet and Semi dense carpet , Bituminous concrete, Grouting.
APRIL	1ST	5TH		HILL ROAD 5.1 Typical cross-sections showing all details of a typical hill road .
	2ND	2ND		5.2 Breast Walls, Retaining walls, different types of bends
		3RD		practice question answer
		4TH		Road Drainage:
		6TH		6.1 Necessity of road drainage work, cross drainage works.
	3RD	1ST		6.2 Surface and sub-surface drains and storm water drains. Location, spacing and typical details of side drains, si embankment, typical cross sections.
		4TH		discussion
		5TH		Road maintenance 7.1 Common types of road failures – their causes and remedies
		6TH		7.2 Maintenance of bituminous road such as patch work and resurfacing.
	4TH	2ND		7.3 Maintenance of concrete roads – filling cracks, repairing joints, maintenance of shoulders (berm), maintenance of traffic control
		3RD		7.4 Basic concept of traffic study, Traffic safety and traffic control signal
		4TH		8.2 Tipper, tractors (wheel and crawler) scraper, bulldozer, dumpers, shovels, graders,
		5TH		QUESTION ANSWER DISCUSSION