

LESSON PLAN (2025 )(S)						
Discipline: Civil Engineering			Name of The Teaching Faculty: PREETISAGAR MOHANTY			
Subject: HIGHWAY ENGINEERING (TH-4)			Semester From Date: 04-02-2025 To Date 17-06-2025			
Sem -4TH			No. Of Weeks: 15		5P/WEEK	
No. of Days/week class allotted: 05 period per week ( Mon, Tue, Wed-1 Period each Thu-2 Period )					TOTAL PERIOD-75	
MONTH	WEEK	DATE	DAYS/ PERIOD	Syllabus to be covered	NO. OF PERIODS AVAILABLE	
				<b>CHAPTER-1 INTRODUCTION(5P)</b>	5	
F E B R U A R Y	2ND	4.02.2025	TUE	1.1 Importance of Highway transportation: importance organizations like Indian roads congress	1	
		5.02.2025	WED	1.1.1 Ministry of Surface Transport, Central Road Research Institute.	1	
		6.02.2025	THU	1.2 Functions of Indian Roads Congress, 1.3 IRC classification of roads	2	
		10.02.2025	MON	1.4 Organisation of state highway department	1	
				<b>CHAPTER-2(Road Geometrics)(20P)</b>	20	
	3RD		11.02.2025	TUE	2.1 Glossary of terms used in geometric and their importance, right of way, formation width, road margin, road shoulder.	2
			12-02-2025	WED	2.1.1 road shoulder, carriage way, side slopes , formation width, road margin	1
			13.02.2025	THU	2.1.2 Road shoulder, carriage way	1
			17.02.2025	MON	road shoulder, carriage way, side slopes	1
	4TH		18.02.2025	TUE	road shoulder, carriage way, side slopes	1
			19.02.2025	WED	2.2 Design and average running speed, stopping and passing sight distance	1
			20.02.2025	THU	stopping and passing sight distance	2
			24.2.2025	MON	2.3 Necessity of curves, horizontal and vertical curves	1
			25.02.2025	TUE	2.3 horizontal and vertical curves including transition curves	1
			27.02.2025	WED	transition curves and super elevation	1

M A R C H	2ND	3.03.2025	MON	transition curves and super elevation	1
		4.03.2025	THU	2.3 Methods of providing super – elevation	2
		5.03.2025	WED	2.3 Methods of providing super – elevation & PROBLEMS	1
		6.03.2025	THU	2.3 Necessity of curves,	1
		10.03.2025	MONDAY	2.3 Necessity of curves, horizontal and vertical curves including transition curves and super elevation, Methods of providing super – elevation	1
	3RD	11.03.2025	TUE	2.3 Necessity of curves, horizontal and vertical curves including transition curves and super elevation, Methods of providing super – elevation	2
				<b>CHAPTER-3(Road Materials )</b>	<b>9</b>
		12.03.2025	WED	3.1 Difference types of road materials in use: soil, aggregates, and binders	1
		13.03.2025	THU	3.2 Function of soil as highway Subgrade	2
		17.03.2025	MON	3.3 California Bearing Ratio	1
	4TH	18.3.2025	TUE	3.3 California Bearing Ratio	1
		19.03.2025	WED	California Bearing Ratio: methods of finding CBR valued	1
		20.03.2025	THU	3.3 California Bearing Ratio: methods of finding CBR valued in the laboratory and at site and their significance	2
		24.03.2025	MON	3.4 Testing aggregates: Abrasion test, impact test, crushing strength test, water absorption test & soundness test	1
				<b>CHAPTER-4(Road Pavements)(13P)</b>	<b>13</b>
5TH	25.03.2025	TUE	4.1 Road Pavement: Flexible and rigid pavement, their merits and demerits, typical cross-sections, functions of various components	1	

	26.03.2025	WED	4.2 Sub-grade preparation: Setting out alignment of road, setting out bench marks, control pegs for embankment and cutting, borrow pits, making profile of embankment, construction of embankment, compaction, stabilization, preparation of subgrade, methods of checking camber, gradient and alignment as per recommendations of IRC, equipment used for subgrade preparation	1
	27.03.2025	THU	4.2 Sub-grade preparation: Setting out alignment of road, setting out bench marks, control pegs for embankment and cutting, borrow pits, making profile of embankment, construction of embankment, compaction, stabilization, preparation of subgrade, methods of checking camber, gradient and alignment as per recommendations of IRC, equipment used for subgrade preparation	2
1ST	1.04.2025	TUE	4.3 Sub base Course: Necessity of sub base, stabilized sub base, purpose of stabilization (no designs) Types of stabilization <input checked="" type="checkbox"/> Mechanical stabilization ,Cement stabilization Fly ash stabilization <input checked="" type="checkbox"/> Lime stabilization	1
	2.04.25	WED	4.4 Base Course: Water Bound Macadam and wet-mix Macadam, Bituminous constructions: Different types	1
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2ND	7.04.2025	MON	4.5 Surfacing: Surface dressing (i) Premix carpet and (ii) Semi dense carpet	1
	8.04.2025	TUE	4.5 Surfacing: Surface dressing (i) Premix carpet and (ii) Semi dense carpet	1

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	9.04.2025	WED	4.6 Rigid Pavements: Concept of concrete roads as per IRC specifications	1
	10.04.25	THU	4.6 Rigid Pavements: Concept of concrete roads as per IRC specifications	2
			CHAPTER-5(Hill Roads)(07P)	7
3RD	15.04.2025	TUE	5.1 Introduction: Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling	1
	16.04.2025	WED	5.1 Introduction: Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling	1
	17.04.2025	THU	5.1 Introduction: Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling	2
4TH	21.04.2025	MON	5.1 Introduction: Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling	1
	22.04.2025	TUE	5.2 Breast Walls, Retaining walls, different types of bends	1
			CHAPTER-6(Road Drainage)(07P)	7
	23.04.2025	WED	6.1 Necessity of road drainage work, cross drainage works	1
	24.04.2025	THU	6.1 Necessity of road drainage work, cross drainage works	2
5TH	28.04.2025	MON	6.1 Necessity of road drainage work, cross drainage works	1
	29.04.2025	TUE	6.2 Surface and sub-surface drains and storm water drains. Location	1

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	30.04.2025	WED	6.2 spacing and typical details of side drains, side ditches for surface drainage, intercepting	1
1ST	1.05.2025	THU	6.2.1 Drain pipe drains in hill roads, details of drains in cutting embankment, typical cross sections.	2
			<b>CHAPTER-7(Road Maintenance)(07P)</b>	7
2ND	5.05.2025	MON	7.1 Common types of road failures – their causes and remedies	2
	6.05.2025	TUE	7.2 Maintenance of bituminous road such as patch work and resurfacing	1
	7.05.2025	WED	7.3 Maintenance of concrete roads – filling cracks, repairing joints, maintenance of shoulders (berm), maintenance of traffic control devices	1
	8.05.2025	THU	7.4 Basic concept of traffic study,	2
3RD	13.05.2025	TUE	7.4 Traffic safety and traffic control signal	1
			<b>CHAPTER-8( Construction equipments )(07P)</b>	7
	14.05.2025	WED	Preliminary ideas of the following plant and equipment:8.1 Hot mixing plant	1
	15.05.2025	THU	8.2 Tipper, tractors (wheel and crawler) scraper, bulldozer, dumpers, shovels, graders, roller dragline	2
			8.3 Asphalt mixer and tar boilers	
			8.4 Road pavers	
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			8.5 Modern construction equipments for roads.	
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