

LESSON PLAN (2023-24)(S)					
Discipline:Civil Engineering			Name of The Teaching Faculty:C.M.SWARUPA NANDA		
Subject:HIGHWAY ENGINEERING (TH-4)			Semester From Date:16-01-2024 To Date 26-04-2024		
Sem -4TH			No. Of Weeks:15		5P/WEEK
No. of Days/week class allotted:05 period per week(Mon,Tue,Wed,Thu,Fri -1 Period each)					TOTAL PERIOD-75
MONTH	WEEK	DATE	DAYS/ PERIOD	Syllabus to be covered	NO. OF PERIODS AVAILABLE
				CHAPTER-1 INTRODUCTION(5P)	5
J A N U A R Y	3rd	16.01.2024	Tuesday	1.1 Importance of Highway transportation: importance organizations like Indian roads congress	1
		17.01.2024	Wednesday	1.1.1Ministry of Surface Transport, Central Road Research Institute.	1
		18.01.2024	Thursday	1.2 Functions of Indian Roads Congress	1
		19.01.2024	Friday	1.3 IRC classification of roads	1
	4th	22.01.2024	Monday	1.4 Organisation of state highway department	1
				CHAPTER-2(Road Geometrics)(20P)	20
		24.01.2024	Wednesday	2.1 Glossary of terms used in geometric and their importance, right of way, formation width, road margin, road shoulder.	1
		25.01.2024	Thursday	2.1.1 road shoulder, carriage way, side slopes	1
	5th	29.01.2024	Monday	formation width, road margin	1
		30.01.2024	Tuesday	2.1.2 Road shoulder, carriage way	1
		31.01.2024	Wednesday	road shoulder, carriage way, side slopes	1
	1st	1.02.2024	Thursday	2.2 Design and average running speed	1
		2.02.2024	Friday	2.2 Design and average running speed	1
		5.02.2024	Monday	stopping and passing sight distance	1
		6.02.2024	Tuesday	stopping and passing sight distance	1

F
E
B
R
U
A
R
Y

2nd	7.02.2024	Wednesday	2.3 Necessity of curves, horizontal and vertical curves	1
	8.02.2024	Thursday	2.3 horizontal and vertical curves including transition curves	1
	9.02.2024	Friday	2.3 horizontal and vertical curves including transition curves	1
3rd	12.02.2024	Monday	transition curves and super elevation	1
	13.02.2024	Tuesday	transition curves and super elevation	1
	15.02.2024	Thursday	2.3 Methods of providing super – elevation	1
	16.02.2024	Friday	2.3 Methods of providing super – elevation & PROBLEMS	1
4th	19.02.2024	Monday	2.3 Necessity of curves,	1
	20.02.2024	Tuesday	2.3 Necessity of curves, horizontal and vertical curves including transition curves and super elevation, Methods of providing super – elevation	1
	21.02.2024	Wednesday	2.3 Necessity of curves, horizontal and vertical curves including transition curves and super elevation, Methods of providing super – elevation	1
	22.02.2024	Thursday	2.3 Necessity of curves, horizontal and vertical curves including transition curves and super elevation, Methods of providing super – elevation	1
			CHAPTER-3(Road Materials)	9
	23.02.2024	Friday	3.1 Difference types of road materials in use: soil, aggregates, and binders	1
5th	26.02.2024	Monday	3.2 Function of soil as highway Subgrade	1
	27.02.2024	Tuesday	3.3 California Bearing Ratio	1
	28.02.2024	Wednesday	3.3 California Bearing Ratio	1

		29.02.2024	Thursday	California Bearing Ratio: methods of finding CBR valued	1
M A R -	1st	1.03.2024	Friday	3.3 California Bearing Ratio: methods of finding CBR valued in the laboratory and at site and their significance	1
	2nd	4.03.2024	Monday	3.4 Testing aggregates: Abrasion test, impact test, crushing strength test, water absorption test & soundness test	1
		6.03.2024	Wednesday	3.4 Testing aggregates: Abrasion test, impact test, crushing strength test, water absorption test & soundness test	1
		7.03.2024	Thursday	3.4 Testing aggregates: Abrasion test, impact test, crushing strength test, water absorption test & soundness test	1
				CHAPTER-4(Road Pavements)(13P)	13
	3rd	11.03.2024	Monday	4.1 Road Pavement: Flexible and rigid pavement, their merits and demerits, typical cross-sections, functions of various components	1
		12.03.2024	Tuesday	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
		13.03.2024	Wednesday	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

C
H

	14.03.2024	Thursday	4.3 Sub base Course: Necessity of sub base, stabilized sub base, purpose of stabilization (no designs) Types of stabilization <ul style="list-style-type: none"> • Mechanical stabilization • Lime stabilization 	1
	15.03.2024	Friday	4.3 Sub base Course: Necessity of sub base, stabilized sub base, purpose of stabilization (no designs) Types of stabilization <ul style="list-style-type: none"> • Cement stabilization • Fly ash stabilization 	1
4th	18.03.2024	Monday	4.3 Sub base Course: Necessity of sub base, stabilized sub base, purpose of stabilization (no designs) Types of stabilization <ul style="list-style-type: none"> • Fly ash stabilization 	1
	19.03.2024	Tuesday	4.4 Base Course: Preparation of base course, Brick soling, stone soling and metalling	1
	20.03.2024	Wednesday	4.4 Base Course: Water Bound Macadam and wet-mix Macadam, Bituminous constructions: Different types	1
	21.03.2024	Thursday	4.5 Surfacing: <ul style="list-style-type: none"> • Surface dressing (i) Premix carpet and (ii) Semi dense carpet	1
	22.03.2024	Friday	4.5 Surfacing: <ul style="list-style-type: none"> • Bituminous concrete • Grouting 	1
	5th	27.03.2024	Wednesday	4.6 Rigid Pavements: Concept of concrete roads as per IRC specifications
28.03.2024		Thursday	4.6 Rigid Pavements: Concept of concrete roads as per IRC specifications	1
	2.04.2024	Tuesday	4.6 Rigid Pavements: Concept of concrete roads as per IRC specifications	1
			CHAPTER-5(Hill Roads)(07P)	7

A
P
R
I
L

1st	3.04.2024	Wednesday	5.1 Introduction: Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling	1
	4.04.2024	Thursday	5.1 Introduction: Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling	1
	5.04.2024	Friday	5.1 Introduction: Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling	1
2nd	8.04.2024	Monday	5.1 Introduction: Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling	1
	9.04.2024	Tuesday	5.2 Breast Walls, Retaining walls, different types of bends	1
	10.04.2024	Wednesday	5.2 Breast Walls, Retaining walls, different types of bends	1
	12.04.2024	Friday	5.2 Breast Walls, Retaining walls, different types of bends	1
			CHAPTER-6(Road Drainage)(07P)	7
3rd	15.04.2024	Monday	6.1 Necessity of road drainage work, cross drainage works	1
	16.04.2024	Tuesday	6.1 Necessity of road drainage work, cross drainage works	1
	18.04.2024	Thursday	6.1 Necessity of road drainage work, cross drainage works	1
	19.04.2024	Friday	6.2 Surface and sub-surface drains and storm water drains. Location	1
4th	22.04.2024	Monday	6.2 spacing and typical details of side drains, side ditches for surface drainage, intercepting	1
	23.04.2024	Tuesday	6.2.1 Drain pipe drains in hill roads, details of drains in cutting embankment, typical cross sections.	1
	24.04.2024	Wednesday	6.2.1 Drain pipe drains in hill roads, details of drains in cutting embankment, typical cross sections.	1

			CHAPTER-7(Road Maintenance)(07P)	7
	25.04.2024	Thursday	7.1 Common types of road failures – their causes and remedies	1
	26.04.2024	Friday	7.2 Maintenance of bituminous road such as patch work and resurfacing	1
E X T R A C L A S S			7.3 Maintenance of concrete roads – filling cracks, repairing joints,	1
			7.3 maintenance of shoulders (berm), maintenance of traffic control devices	1
			7.3 maintenance of shoulders (berm), maintenance of traffic control devices	1
			7.4 Basic concept of traffic study,	1
			7.4 Traffic safety and traffic control signal	1
			CHAPTER-8(Construction equipments)(07P)	7
			Preliminary ideas of the following plant and equipment:	1
			8.1 Hot mixing plant	1
			8.2 Tipper, tractors (wheel and crawler) scraper, bulldozer, dumpers, shovels, graders, roller dragline	1
			8.3 Asphalt mixer and tar boilers	1
			8.4 Road pavers	1
			8.5 Modern construction equipments for roads.	1
			8.5 Modern construction equipments for roads.	1