

GANDHI ACADEMY OF TECHNOLOGY AND ENGINEERING				
DEPARTMENT OF CIVIL ENGINEERING				
LESSON PLAN				
DISCIPLINE:-CE				
SEMESTER:-4TH		FROM DATE:-02.01.2024		TO DATE:-23.04.2024
Name of Teaching Faculty: RAJESH KUMAR BEHERA DALAI				
SUBJECT:- HIGHWAY ENGINEERING				
NO. OF PERIOD/PER WEEK CLASS ALLOTTED:-5				
TOTAL NO. OF CLASS AVAILABLE IN SEM:-75				
SL NO.	WEEK	CLASS DATE	NO. OF CLASS/DAY	TOPICS
1	Week-01	02.01.2024	1	Introduction- Importance of Highway transportation
		03.01.2024	1	Importance organizations like Indian roads congress, Ministry of Surface Transport
		04.01.2024	1	Central Road Research Institute, Functions of Indian Roads Congress
		05.01.2024	1	IRC classification of roads , Organization of state highway department
2	Week-02	08.01.2024	1	Road Geometrics introduction
		09.01.2024	1	Glossary of terms used in geometric and their importance
		10.01.2024	1	Importance of road geometrics, right of way, formation width
		11.01.2024	1	Road margin
		12.01.2024	1	Road shoulder
3	Week-03	15.01.2024		HOLIDAY
		16.01.2024	1	Carriage way
		17.01.2024	1	Side slopes
		18.01.2024	1	Kerbs
		19.01.2024	1	Formation level, camber
4	Week-04	22.01.2024	1	Gradient
		23.01.2024		HOLIDAY
		24.01.2024	1	Design and average running speed, stopping and passing sight distance
		25.01.2024	1	Necessity of curves, horizontal and vertical curves
		26.01.2024		HOLIDAY
5	Week-05	29.01.2024	1	Transition curves and super elevation
		30.01.2024	1	Methods o f providing super – elevation
		31.01.2024	1	Discussion
		01.02.2024	1	Road Materials- introduction
		02.02.2024	1	Difference types of road materials in use: soil, aggregates
6	Week-06	05.02.2024	1	Binder , Function of soil as highway Sub-grade
		06.02.2024	1	California Bearing Ratio: methods of finding CBR valued in the laboratory
		07.02.2024	1	At site and their significance , Testing aggregates
		08.02.2024	1	Abrasion test, impact test,
		09.02.2024	1	Crushing strength test, water absorption test
7	Week-07	12.02.2024	1	Soundness test
		13.02.2024	1	Road Pavements-: Flexible and rigid pavement, their merits and demerits,
		14.02.2024		HOLIDAY
		15.02.2024	1	Typical cross-sections, functions of various components
		16.02.2024	1	Flexible pavements: Sub-grade preparation
8	Week-08	19.02.2024	1	Setting out alignment of road, setting out bench marks, control pegs for embankment

		20.02.2024	1	Cutting, borrow pits, making profile of embankment,
		21.02.2024	1	Construction of embankment, compaction, stabilization
		22.02.2024	1	Preparation of sub-grade, methods of checking camber,
		23.02.2024	1	Gradient and alignment as per recommendations of IRC
9	Week-09	26.02.2024	1	Equipment used for sub-grade preparation
		27.02.2024	1	Sub base Course: Necessity of sub base, stabilized sub base, purpose of stabilization
		28.02.2024	1	Types of stabilization , Mechanical stabilization , Lime stabilization
		29.02.2024	1	Cement stabilization , Fly ash stabilization
		01.03.2024	1	Base Course: Preparation of base course
10	Week-10	02.03.2024	1	Brick soling , stone soling and metalling
		04.03.2024	1	Water bound macadam and wet mix macadam
		05.03.2024		HOLIDAY
		06.03.2024	1	Bituminous construction , different types
		07.03.2024	1	Bituminous concrete , Grouting
11	Week-11	11.04.2024	1	Rigid Pavements: Concept of concrete roads as per IRC specifications.
		12.03.2024	1	Surfacing: Surface dressing ,Premix carpet and ,Semi dense carpe
		13.03.2024	1	Bituminous concrete , Grouting , Rigid Pavements: Concept of concrete roads as per IRC specifications
		14.03.2024	1	Typical cross-sections showing all details of a typical hill road in cut,
		15.03.2024	1	partly in cutting and partly in filling
12	Week-12	18.03.2024	1	Breast Walls,
		19.03.2024	1	Retaining walls, different types of bends
		20.03.2024	1	Road Drainage: ,Necessity of road drainage work,
		21.03.2024	1	Cross drainage works ,Surface and sub-surface drains
		22.03.2024	1	Storm water drains. Location, spacing and typical details of side drains
13	Week-13	25.03.2024		HOLIDAY
		26.03.2024		HOLIDAY
		27.03.2024	1	Side ditches for surface drainage, intercepting drains, pipe drains in hill roads
		28.03.2024	1	Details of drains in cutting embankment, typical cross sections
		29.03.2024		HOLIDAY
14	Week-14	01.04.2024		HOLIDAY
		02.04.2024	1	Road Maintenance : introduction ,Common types of road failures
		03.04.2024	1	Their causes and remedies
		04.04.2024	1	Maintenance of bituminous road such as patch work and resurfacing
		05.04.2024	1	Maintenance of concrete roads – filling cracks, repairing joints
15	Week-15	08.04.2024	1	Maintenance of shoulders (berm), maintenance of traffic control devices
		09.04.2024	1	Basic concept of traffic study, Traffic safety
		10.04.2024	1	Traffic control signal,Construction equipments:
		11.04.2024		HOLIDAY
		12.04.2024	1	Preliminary ideas of the following plant and equipment
16	Week-16	14.04.2024	1	Hot mixing plant Tipper
		15.04.2024	1	Tractors (wheel and crawler) scraper, bulldozer dumpers,
		16.04.2024	1	Shovels, graders, roller dragline
		17.04.2024		HOLIDAY
		18.04.2024	1	Asphalt mixer and tar boilers
17	Week-17	22.04.2024	1	Road pavers,Modern construction equipments for roads
		23.04.2024	1	REVISION