

LESSON PLAN

PROGRAMME: DIPLOMA IN CIVIL ENGINEERING COURSE NAME: TRANSPORTATION ENGINEERING COURSE CODE: CEPC 203 SEMESTER: 3RD		NAME OF THE FACULTY: UTKALIKA PRADHAN SESSION: WINTER PERIODS/WEEK: 03 TOTAL PERIODS: 45
CLASS	TOPIC	
1	Role of transportation in the development of nation.	
2	Scope and Importance of roads in India and its Characteristics.	
3	Different modes of transportation	
4	General classification of roads	
5	Road Alignment & Selection and factors affecting road alignment.	
6	Cross- sectional elements of road & Standards cross-sections of national highway in embankment and cutting.	
7	Camber & Gradient: Definition, purpose, types as per IRC – recommendations.	
8	Sight distance (SSD): Definition, types IRC – recommendations	
9	Numericals on Sight Distance.	
10	Curves: Necessity, types: Horizontal, vertical curves.	
11	Extra widening of roads: numerical examples.	
12	Super elevation: Definition, formula for calculating minimum and maximum Super elevation	
13	Numericals on Super elevation.	
14	Method of providing super-elevation.	
15	Numerical practice on Sight Distance & Super elevation.	
16	Types of road materials, their types & properties.	
17	Tests on aggregates-Flakiness and Elongation Index tests, Angularity Number test.	
18	Tests on Bitumen- Penetration, Ductility, Flash and Fire point test and Softening point test.	
19	Pavement – Definition, Types, Structural Components of pavement and their functions.	
20	Construction of WBM road. Merits and demerits of WBM & WMM road.	
21	Construction of Flexible pavement / Bituminous Road.	
22	Terms used in BR-prime coat, tack coat, seal coat, Merits and Demerits of BR.	
23	Cement concrete road -methods of construction, Alternate and Continuous Bay Method	
24	Construction joints, filler and sealers, merits and demerits of concrete roads. Types of joints.	
25	Revision & general discussion on road materials & pavement construction.	
26	Classification of Indian Railways, zones of Indian Railways	
27	Permanent way: Ideal requirement, Components; Rail Gauge, types, factors affecting selection of a gauge.	
28	Rail, Rail Joints - requirements, types	
29	Creep of rail: causes and prevention.	
30	Sleepers - functions and Requirement, types - concrete sleepers and their density	
31	Ballast - function and types, suitability.	
32	Rail fixtures and fastenings – fish plate, spikes, bolts, keys, bearing plates, chairs-types of anchors and anti-creepers.	
33	Railway Alignment- Factors governing rail alignment. Gradient, curves- types and factors affecting, grade compensation	
34	Track Cross sections – standard cross section of single and double line in cutting and embankment.	

	Important terms-permanent land, formation width, side drains
35	Super elevation, limits of Super elevation on curves.
36	Cant deficiency, negative cant, coning of wheel, tilting of rail.
37	Turn out- types, components, functions and inspection.
38	Types of Points & Crossings.
39	Station -Purpose, requirement of railway station, important technical terms, types of railway station, factors affecting site selection for railway station.
40	Station yard: Classification- Passenger, goods, locomotive and marshalling yards. Function & drawbacks of marshalling yards.
41	Track Maintenance- Necessity, Classification
42	Tools required for track maintenance with their functions,
43	Organization of track maintenance, Duties of permanent way inspector, gangmate and key man.
44	Revision on Railway engineering.
45	Revision on Railway engineering.


Signature of Faculty


Signature of HOD