

Lesson Plan/ Course Break – up
PCC-CVE302-T Transportation Engineering - I

Discipline	B. Tech in Civil Engineering
Semester	VI (3 rd Year)
Subject	PCC-CVE-302-T, Transportation Engineering-I
Work Load per week (in hrs.) :	Lectures – 03

Week	Theory	
	Lecture day	Topic (Including Assignment Test)
1 st	1	Transportation and its importance. Different modes of transportation, Phased development of Roads in India
	2	Planning of Highways: Planning & Management of Highways, Various Road plans developed in India
	3	Road patterns, Highway Surveys & Alignment, Design, Drawings, Estimates & Project Report
2 nd	4	Geometric Design of Highways: Introduction, Highways Classification, right of way, Land width, width of formation,
	5	Thickness of pavement, Sight Distances, Stopping site distance,
	6	overtaking sight distance, overtaking zones,
3 rd	7	camber, Road Curves
	8	Transition Curves, Super elevation
	9	Widening at curves, IRC-recommendations for various geometric design parameters.
4 th	10	Construction of Roads: Various types of bituminous constructions and their selection
	11	Construction of earth, gravel, ,
	12	water bound macadam
5 th	13	surface dressing, premixed carpet, bituminous macadam,
	14	bituminous concrete, mastic asphalt,
	15	cement concrete pavements
6 th	16	Types of bituminous binders and properties: Manufacturing of bitumen, paving bitumen specifications as per IS 73: 2013
	17	comparison between bitumen, tar, cut back & emulsion,
	18	Modified binders and its rheology.
7 th	19	MINOR TEST 1
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8 th	22	Pavements: Factors affecting design of pavements.
	23	Structure of Flexible pavement and its design procedure as per IRC 37:2001, 2012 and IRC72: 2007
	24	Construction of Cement Concrete Roads & its layer specifications,
9 th	25	Design of PQC pavements as per IRC 58 & SP 062.
	26	Failures of flexible and rigid pavements: Causes of Failures and Remedial Measures,
	27	Maintenance of flexible and rigid pavements,
10 th	28	pavement evaluation and its strengthening
	29	Traffic Studies: Definition of Traffic Engineering, Various faces of Traffic Engineering,
	30	Road user characteristics, Importance of traffic studies,
11 th	31	spot speed, speed and delay and origin and destination studies.
	32	Traffic accident studies, Causes of accidents and Remedial Measures,
	33	Parking studies
12 th	34	Drainage: Introduction, Importance & Principles of Highway Drainage
	35	Surface Drainage, Sub Surface drainage
	36	Highway Maintenance: Introduction, Maintenance of Earth
13 th	37	gravel, WBM Roads,
	38	Bituminous Roads,
	39	Cement Concrete pavements
14 th	40	MINOR TEST II
	41	
	42	
15 th	43	Highway Economics: Economics of Pavement types,
	44	Economic Evaluation of Highway Schemes,
	45	Life Cycle Costing