

Week	Theory		Topic Covered Date and Remarks		
	Lecture- re- Day	Topic (Including Assignment/Test)	Date	HOD	Director- Principal
1 st	1	Road transportation. Brief review of history of road development in India and abroad			
	2	Roman, Tresaguet, Telford and Macadam constructions			
	3	Road patterns. Classification of roads, Objectives of highway planning, Planning surveys.			
2 nd	4	Saturation system of planning. Highway Plans			
	5	Highway Alignment and Surveys			
	6	Main features of 20 years road development plans in India			
3 rd	7	Requirements of an ideal highway alignment. Factors affecting alignment. Surveys for highway alignment			
	8	Cross Section Elements and Sight			
	9	Distance Considerations: Cross section elements: friction			
4 th	10	Carriageway, formation width, land width, camber, IRC recommended values.			
	11	Types of terrain Design speed. Sight distance, stopping sight distance, overtaking sight distance,			
	12	Overtaking zones, intermediate sight distance, sight distance at intersections,			
5 th	13	Head light sight distance, set back distance. Critical locations for sight distance.			
	14	Design of Horizontal and Vertical Alignment: Effects of centrifugal force.			
	15	Design of super-elevation. Providing super-elevation in the field.			
6 th	16	Radius of circular curves. Extra- widening. Type and length of transition curves.			
	17	Gradient, types, values. Summit curves and valley curves, their design criterion.			
	18	Grade compensation on curves			
7 th	1st Minor Test				
8 th	19	Traffic Characteristics and Traffic Surveys:			
	20	Road user and vehicular characteristics			
	21	Traffic studies such as volume, speed and O & D study. Parking and accident studies			
9 th	22	Fundamental diagram of traffic flow. Level of service			
	23	PCU Capacity for non-urban roads. Causes and preventive measures for road accidents.			
	24	Traffic Control Devices: Traffic control devices: signs, signals, markings and islands			
10 th	25	Types of signs. Types of signals. Design of an isolated fixed time signal by IRC method			
	26	Intersections at grade and grade separated intersections			
	27	Design of a rotary. Types of grades separated intersections.			
11 th	28	Highway Materials: Soil and Aggregates: Subgrade soil evaluation:			
	29	CBR test, plate bearing test. Desirable properties of aggregates			
	30	Various tests, testing procedures and IRC/IS specification for suitability of aggregates			
12 th	31	Proportioning of aggregates for road construction by trial-and-error method.			
	32	Bituminous Materials and Bituminous Mixes			
	33	Types of bituminous materials: bitumen, tar, cutback and emulsions			
	34	Various tests, testing procedures			

13th	35	IRS/IS specifications for suitability of bituminous materials in road construction			
	36	Bituminous mix, desirable properties			
14th	2nd Minor Test				
15th	37	Marshall' method of mix design.			
	38	Basic concept of use of polymers			
	39	rubber modified bitumen			