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## **Topic name: Highway Geometric Design**

### **Course Content:**

**Highway development in India:** Road development in 20<sup>th</sup> Century, Road development in 21<sup>st</sup> Century, CRRI, NHAI, IRC.

**Functional classification of roads as per IRC:** Methods of classification, rural road Classification, Urban road classification.

*Highway Project:* Highway planning, Feasibility study, Design requirements, Influencing factors, Special considerations, Engineering surveys, Drawings and Report, Types of highway project

### **Design of Sight Distances:**

Stopping sight distance (SSD): Influencing factors, Braking distance on level surface, Braking distance on slopes

Overtaking sight distance (OSD): Influencing factors, Overtaking process, Assumptions made in the analysis, Effects of gradient on OSD, Overtaking zones.

*Design of Horizontal Alignment & Vertical Alignment:* Design controls and criteria, Cross Sectional elements, Horizontal radius, Lateral friction, Superlevation, Extra widening, Horizontal transition curve, Set-back distance, longitudinal gradient, Summit curve, Valley curve, Combination of horizontal and vertical alignment features.

2. Pre-requisite: None
3. Relevant semester: 5th/6th/7th
4. Relevant department: Civil Engineering
5. Relevant course: Transportation Engineering