

# € TRAINING

Geometric Road Design





# Geometric Road Design

## Introduction:

This Geometric Road Design training program teaches the principles and techniques of designing road alignments and cross-sections. It includes instruction on horizontal and vertical alignment, cross-sectional elements, and safety considerations. Participants gain practical skills to create road designs that meet regulatory standards and project needs.

## Program Objectives:

At the end of this program the participants will be able to:

- Recognize the applications of Horizontal and Vertical Alignment and Road Planning and Design principles.
- Recognize the significance of sustainable urban transport planning.
- Recognize the importance of road geometric design for safe roads.
- Road Safety Inspection and Base Road Safety Audit RSA RSI.
- Recognize the opportunities presented by the newest ITS design trends for roads.
- Create traffic simulations for the coordination of traffic signs and signals.
- Prepare the project for the implementation of ITS, sustainability, upkeep, and basic road geometric design.

## Targeted Audience:

- Road engineers.
- Project Directors.
- Engineers in transport.
- Strategic Development Road Geometric Design Personnel.
- Managers of Works and Supervisors.
- Participating architects in urban design.
- Engineers in technology, CTOs, and CIOs.
- Urban and rural planning specialists.
- Traffic engineering scholars and practitioners.

- People who organize and arrange for civil, traffic, and transportation.

## Program Outline:

### Unit 1:

#### Introduction:

- Geometric Design: General Concept: Highway Classification, Functional Class, Basic Terms, Design Vehicles and Roadway Cross Section.
- Importance of Geometric Design.
- Design Control Criteria.

### Unit 2:

#### Road Planning:

- Planning for Sustainable Urban Transport.
- Road Design: Network design and Facility design.
- Town Road Improvement Project Plan.

### Unit 3:

#### Alignment of Horizontal and Vertical Planning and Design:

- Horizontal Alignment: Circular Curves, Transition Curves and Curve Widening.
- Vertical Alignment: Gradients, Vertical Curves and Drainage.
- Vertical and Horizontal Design Coordination.

### Unit 4:

#### Road Geometric Design for Safe Roads:

- Safety Administration.
- Changes to the Road Environment.
- Design and Redesign Safety Standards.
- Drive-Safe Audit RSA.

- Driving Safety Check RSI.
- Systems for intelligent transportation.

## Unit 5:

### Traffic Signal Design:

- Terminology.
- Planning and Designing Traffic Signs.
- Types of Movements.
- Types of Traffic Signals.
- Types of Vehicle.
- Vehicle Detection.
- Signal Coordination.