

# € TRAINING

Roadways Inspection and Maintenance





# Roadways Inspection and Maintenance

## Introduction:

Highways and roads are the essential means of transportation between towns, and they play a significant part in integrating economic activity into everyday life. The analysis and design of pavement are key components of this training program on inspection and maintenance of roads, with an emphasis on the creation of connotations in practical design scenarios.

## Program Objectives:

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

- Differentiate between the various pavement varieties.
- Sorting the dirt into AASHTOO categories.
- Create the warm asphaltic mixture.
- Control the pavement maintenance and repair program.

## Targeted Audience:

- Civil Engineer.
- Civil Technician.
- Structural Engineer.
- Geo-technical Engineer.

## Program Outline:

### Unit1:

#### Flexible and Rigid Pavement Structural Design:

- Basic Pavement Introduction and a Good Review of Pavement Background.
- Suitable Examples of the AASHTO Soil Classification for Existing Sub-grade Soil.
- The distinction between rigid and flexible pavement.
- Flexible Pavement Design.

- Rigid pavement design.

## Unit2:

### Design of Hot Asphaltic Mixture:

- Physical Properties of Hot Asphaltic Mixture - Aggregates and Asphalt Cement.
- Preparing the Asphaltic Samples.
- The Method of Extracting the Asphalt Samples to be Tested.
- The Test of Sieve Analysis.
- Different Types of Hot Mixes with Different Methodology of Design.
- Marshall Mix Design with Solved Examples.
- The Stages of Constructing Pavement.
- The Effect of Recycling Loads on Pavement.

## Unit3:

### Superpave Volumetric Mix Design for Asphalt:

- Terminology and Tools Used.
- How to Design a Mix for Durable Pavement.
- Principles for Picking the Right Materials.
- A Design Aggregate Structure is Determined.
- Design and Content of Asphalt Binder.
- Superpave Mixture Types and Superpave Mixes with RAP.
- Improved Superpave Mix Design with Solved Examples.

## Unit4:

### Construction Soil Mechanics:

- Properties of Soil Mechanics.
- Classification of Soil according to AASHTOO.
- Roughness Evaluation.

- Structural Capacity Evaluation.
- The Cost Analysis of the Life Cycle of the Pavement for both of Flexible and Rigid Pavements.
- Programming of Rehabilitation and Maintenance of Pavement.

## Unit 5:

### Roadway Deterioration Cause:

- Roadway fissures and rust.
- Roadway Detection Tests.
- Protective measures to preserve both paved and unpaved roads.
- Roadway Maintenance Plan Method.
- Modern and Cutting-Edge Pavement Maintenance Technology.