Traffic Signal Timing Course Schedule

Lesson 1 Principles of Intersection Signalization

1.0 Administrative Details and Introductions

2.0 Introduction of Signal Systems

- 2.1 History
- 2.2 Types of signal systems
- 2.3 Operations of signal systems

3.0 Importance of Signal Coordination

Lesson 2 Basic Concepts of Signal Timing

1.0 Basic Capacity Related Concepts and Critical Movement Analysis

- 1.1 Critical Movement Analysis
- 1.2 Capacity Concepts from HCM

2.0 Basic Signal Timing Concepts

- 2.1 Signal Control Types
- 2.2 Signal Phasing
- 2.3 Left-Turn Phasing Examples
- 2.4 Lost Time
- 2.5 Introduction to Signal Operations Control Logic

Lesson 3 Design Concepts

1.0 Traffic Signal Design

- 1.1 Signal Design Operations Analysis
- 1.2 Guidelines for Left Turn Signal Phasing
- 1.3 Other Important Design Considerations for Signal Timing

2.0 Traffic Signal Detectors

- 2.1 Types of Detectors
- 2.2 Detector Functions in controller

Lesson 4 Isolated Traffic Signal Timing Concepts

1.0 Phase Parameters

- 1.1 Vehicle change and clearance intervals
- 1.2 Pedestrian Timing
- 1.3 Minimum greens
- 1.4 Maximum greens
- 1.5 Recalls
- 1.6 Detector Timing

2.0 Detector Timing and Design

- ➢2.1 Gap settings and Volume density functions
- ➢2.2 Detector placement
- ➢2.3 Dilemma Zone Concepts
- ➢2.4 Examples (City of Portland Procedures)

Lesson 5 Coordinated Signal Timing

1.0 Basics of Coordination

- ➢1.1 Cycle Length
- ➢1.2 Split
- ➢1.3 Offset
- ➢1.4 Time-Space Diagram Concepts

2.0 Coordination Operations

- ➢2.1 Operating Mode
- ➢2.2 Coordination Concepts
- ➢2.3 Bandwidth
- ➢2.4 Other Considerations

3.0 Interpretation of Signal Timing Sheets

Lesson 6 Developing Timing Plans

1.0 Existing Conditions Analysis

- 1.1 Scope of Study
- 1.2 Data Collection

2.0 Timing Analysis

- 2.1 Establishing Objectives and MOEs
- 2.2 Scoping the Analysis
- 2.3 Tools Available

3.0 Implementation

4.0 Evaluation