

DAY 1

Introduction to the Traffic Signal Control System-Modelling

- Exploring the System and Providing a Framework
- Introduction to the Traffic Signal Timing Manual
- Queuing Systems
- Modelling Traffic Flow at Signalized Intersections
- Using High-Resolution Field Data to Visualize Traffic Flow
- From Model to the Real World: Field Observations
- Basic Operational Principles

DAY 2

Whose Turn is it? (Phasing, Rings, and Barriers) and Traffic Controller Timing Processes

- Phasing, Rings, and Barriers
- Traffic Controller Timing Process
- How a Traffic Phase Times and Terminates
- Exploring a Controller Emulator
- Constructing a Traffic Control Process Diagram
- Signal Timing Parameters

DAY 3

Timing Processes on One-Approach and for the Intersection

- Considering Minimum Green Time, Passage Time, and Detection Zone Length
- Relating the Length of the Detection Zone to the Duration of the Green Indication
- Determining the Length of the Minimum Green Time
- Understanding the Variation of Vehicle Headways in a Departing Queue
- Actuated Traffic Control Processes
- Assessing the Effect of the Minor Street Vehicle Extension Time on Intersection Operations
- Determining the Effect of the Maximum Green Time on Intersection Operations
- Setting the Maximum Green Timing Parameter for All Approaches of an Intersection

DAY 4

Left Turn Phasing and Right-of-Way Change

- Permitted Left Turn Operations
- Comparing Permitted and Protected Left-Turn Phasing
- Comparing Protected / Permitted and Protected Left-Turn Phasing
- Analysis and Design of Left Turn Treatment
- Change and Clearance Intervals
- Determining Vehicle Change and Clearance Intervals
- Yellow and Red Clearance Intervals

DAY 5

The Simulation Environment and Final Design

- Micro-simulation Models and the Traffic Control System
- Building a Simulation Model Network
- Traffic Analysis Tools
- Integrating Information, Justifying Choices, and Communicating Results
- Assembling Information for Your Timing Plan Design
- Signal Timing Design in Practice
- Design Report
- Design Evaluations and Assessments