TRAFFIC SIGNAL OPERATIONS: PART 1 (TE-04)

COURSE OUTLINE

DAY ONE
7:30 – 8:00  Check-in and Registration
8:00 – 8:15  Introductions
8:15 – 8:45  Overview of Course
   1)  Discuss purpose and need for signal timing
   2)  Course Objectives (signal timing policy, process, principles, and theories)
   3)  Organization of Course
8:45 – 9:10  Discussion on Field Conditions to Observe
9:10 - 9:15  Break
9:15 – 10:10 Capacity Concepts (presentation and class discussion)
   1)  Introduction
   2)  Characteristics affecting signal timing
   3)  Capacity and critical volume analysis
   4)  Define basic signal timing variables of cycle length, split, and offset
   5)  Understand manner in which they are calculated based on traffic characteristics
10:10 – 10:15 Break
10:15 – 11:10 Capacity Concepts (continued...)
   6)  Capacity and critical movement analysis (spreadsheet examples)
   7)  Traffic volume analysis (spreadsheet example)
11:10 – 11:15 Break
11:15 – 11:40 Traffic Signal Design (signal timing consideration)
   Part 1
   1)  Physical component of a traffic signal system
   2)  Identify three types of controllers including their functional capabilities, applications, and limitations
   3)  Phasing overview: ring-and-barrier diagrams/designs
   4)  Class exercise: ring-and-barrier design
11:40 – 12:10 Basic Signal Controller Parameters
   Part 1
   1)  Settings that define the duration of a vehicle phase
12:10 – 1:10  Lunch
1:10 – 1:40  Basic Signal Controller Parameters (Part 1 continued...)
   2)  Pedestrian timing
   3)  Clearance intervals (yellow and all-red)
1:40 – 2:10  Hands-On Class Problems
   PlanSig examples (you work ‘em)
   1)  Applying critical movement analysis, pedestrian timing, and clearance timing
2:10-2:15 Break
2:15-3:10 Hands-On Class Problems (continued…)
   2) Converting PlanSig results to cycle sequence
3:10 – 3:15 Break
3:15 – 4:05 Complete Hands-On Class Problems
4:05 – 4:10 Break
4:10 – 4:55 Traffic Signal Design (signal timing consideration continued…)
   Part 2
   1) Detector logic and extension setting
   2) Traffic signal controllers
4:55 – 5:00 Wrap-up of Day One Course

DAY TWO
8:00 – 8:55 Review what we learned on Day One
8:55 - 9:00 Break
9:00 – 10:00 Basic Signal Controller Parameters (continued…)
   Part 2
   1) Introduction to signal timing sheets (e.g. Caltrans, BiTran and Naztec)
   2) Recall and other controller features
   3) Density timing
10:00 – 10:05 Break
10:05 – 10:55 More Hands-On Class Problems
10:55 – 11:00 Break
11:05 – 12:05 More Hands-On Class Problems
12:05 – 1:05 Lunch
1:05 – 2:00 Introduction to Traffic Signal Coordination Concepts (covered in detail in TE-10)
2:00 – 2:05 Break
2:05 – 3:05 Final Overall Timing Problem (requires all that you have learned)
3:05 – 3:10 Break
3:10 – 3:45 Filling-in various timing sheets
3:45 – 4:15 Summary – What Have You Learned?
4:15 – 4:30 Evaluations and Dismissal

What this class is not
✓ You will **not** learn how to coordinate signals, but only to understand coordination concepts
✓ We will **not** teach you to use Synchro
✓ You will **not** learn how to program controllers and equipment – only partial instruction on timing sheets and detector settings, etc.
✓ You will **not** learn how to design signals, only how to define specifications like detector setbacks, turn lane lengths, etc.
✓ Tech Transfer has specific two and three day courses for the above beyond this course