

# Advanced Traffic Engineering (20-551)

## Objectives:

To understand fundamental traffic characteristics

To estimate variables required for highway planning and traffic operation such as highway capacity and delay

To understand fundamentals of traffic signal control technique and to be able to set traffic signal

## Chapter

- 1 Basic Concepts and Characteristics
- 3 Road-User, Vehicle, and Roadway Characteristics
- 5 Traffic Stream Characteristics
- 15 The Hierarchy of Intersection Control
- 18 Principles of Intersection Signalization
- 19 Fundamentals of Signal Timing and Design: Pre-timed Signals
- 20 Fundamentals of Signal Timing and Design: Actuated Signals
- 21 Signal Coordination for Arterials and Networks
- 22 Capacity and Level of Service Analysis: Signalized Intersections—the HCM Method
- 23 Planning-Level Analysis of Signalized Intersections
- 25 Unsignalized Intersections and Roundabouts
- 26 Interchanges and Alternative Intersections

- 28 Capacity and Level of Service Analysis: Basic Highway Segments
- 29 Capacity and Level of Service Analysis: Weaving Segments on Freeways and Multilane Highways
- 30 Capacity and Level of Service Analysis: Merge and Diverge Segments on Freeways and Multilane Highways

Text:

Traffic Engineering, Fifth Edition, 2019

By: Roger P. Roes, Elena S. Prassas, and William R. McShane