Learning Objectives - Transportation Planning Process

1. Describe the 4-step planning process.
2. Explain factors influencing trip-making decisions.
3. Define trip generation terminology.
4. Forecast trip generation using rates and equations provided in ITE’s Trip Generation report.
Learning Objectives - Driver and Vehicle Characteristics

1. Describe aspects of driver and vehicle influencing design of roadways.

2. Explain what is meant by perception/reaction time in roadway design.

3. Analyze stopping distance requirements using both the theoretical and practical braking distance equations.
Learning Objectives - Geometric Design

1. Explain the goal of geometric design.
2. Describe factors influencing highway design.
3. Identify elements of vertical and horizontal curves.
4. Design vertical and horizontal curves from specified constraints.
Learning Objectives - Uninterrupted Flow

1. Define two classifications of flow.

2. Describe Greenshields linear speed-density model.

3. Explain what is meant by capacity, and capacity values of q, k, and u.

4. Evaluate conditions at multiple locations surrounding a blockage to traffic flow, and identify queuing characteristics.
Learning Objectives - Capacity and LOS

1. Describe the six levels of service, and the factors influencing LOS.

2. Analyze conditions for basic freeway segments to determine LOS.

3. Design lane requirements for basic freeway segments based on a required LOS.
Learning Objectives - Intersection Operation

1. Explain why control at intersections is sometimes warranted.

2. Define key terms relating to signal operation.

3. Analyze lane capacity for a signalized intersection.

4. Design cycle length and splits for intersections controlled by pre-timed signals.
Learning Objectives - Clearance Interval and Coordinated Signal Timing

1. Evaluate clearance interval timing and design pre-timed signals to eliminate dilemma zone.

2. Evaluate coordinated signal timing for progression efficiency.

3. Design coordinated signals for full progression.