

# Introduction to Transportation Data - Course Outline

## Module 1: Course Overview

- Introduce course topic and goals
- Preview course content (i.e., 5 learning modules)
- Example 1 – Florida DOT using ITS in a targeted way
- Example 2 – City of Detroit Remote Traffic Management System
- Key Takeaways
- Knowledge Check Questions

## Module 2: Introduction to Transportation Data

- Define ITS and its role
- Describe how agencies use ITS
- Identify key agency priorities
- ITS Use Cases and Settings
- Example 3 – Connecticut DOT work zone safety alerts
- Describe two main types of transportation data and their applications
  - Planning data and applications
  - Real-time data and applications
- Example 4 – Florida DOT intersection safety using AI
- Knowledge Check Questions
- Key Takeaways

## Module 3: Capture & Transmission

- Introduce transportation data management process (data capture, data transmission, data processing, and data organization and sharing)
- Describe two main ways that agencies capture data
  - Agency-owned data collection
  - Mass-collected data from third parties
- Example 5 – Yakima Nation and WashDOT real-time safety warning system
- Example 6 – PennDOT identifying accidents through social media
- Describe methods of data transmission
- Knowledge Check Questions
- Key Takeaways

## Module 4: Data Processing, Organization, and Sharing

- Describe data processing
  - Data standardization
  - Data cleaning
  - Data storage
- Pros and Cons of using cloud-based systems
- Example 7 – MTC Developing a Regional Transit API
- Describe two main types of data architecture
  - Traditional/Closed
  - Modern/Open
- Discuss data sharing (with other agencies, private sector, and the public)
- Example 8 – RTC of Southern Nevada and Nevada Highway Patrol Data Sharing for Incident Management
- Knowledge Check Questions
- Key Takeaways

## Module 5: Challenges, Future of ITS and Conclusion

- Describe the challenges agencies face with data management and how to address them
- Example 9 – Connected School Buses in Alpharetta, Georgia
- Describe likely developments in transportation data in the next 5-10 years
- Example 10 – Contra Costa County Shared Autonomous Vehicles
- Knowledge Check Questions
- Key Takeaways
- Final Exam