Advanced Intelligent Transportation Systems Training Course

Professional Development Training Course Outline

Category	Traffic Management & Road Safety	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Advanced Intelligent Transportation Systems (AITS) represent the cutting edge of modern mobility, integrating AI-driven traffic analytics, IoT-enabled sensing, connected vehicle ecosystems, and smart infrastructure technologies to optimize transportation networks. As cities move toward smart mobility and autonomous transportation, AITS provides the digital backbone for reducing congestion, enhancing safety, streamlining public transit operations, and improving environmental sustainability. Advanced Intelligent Transportation Systems Training Course equips learners with a deep understanding of the emerging innovations shaping urban mobility in the era of Industry 4.0 and smart city transformation.

Through real-world case studies, simulation exercises, and data-driven insights, participants will explore how advanced technologies such as machine learning, edge computing, vehicle-to-everything (V2X) communication, and big data transportation analytics redefine the planning and management of transportation systems. By the end of the program, learners will gain the competencies required to design, evaluate, and implement transformative AITS solutions aligned with global trends in digital mobility, intelligent infrastructure, and sustainable transportation innovation.

Programme Curriculum

Advanced Intelligent Transportation Systems Training Course

Introduction

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Course Duration

5 days

Course Objectives

1. Understand the foundations of AI-powered Intelligent Transportation Systems.
2. Apply IoT-enabled sensing and communication technologies in transportation networks.
3. Analyze big data mobility patterns using machine learning.
4. Evaluate V2X, V2I, and V2P communication frameworks in smart cities.
5. Develop strategies for smart traffic management and congestion mitigation.
6. Assess autonomous vehicle integration within existing transport systems.
7. Implement predictive analytics for transportation planning.
8. Explore edge computing and cloud-based decision platforms.
9. Design cybersecurity-resilient mobility systems.
10. Assess sustainable and green mobility solutions using AITS.
11. Build digital twin transportation models for scenario testing.
12. Examine global mobility-as-a-service (MaaS) frameworks.
13. Apply best practices in smart mobility policy, governance, and innovation ecosystems.

Target Audience

1. Transportation planners
2. Traffic engineers and roadway designers
3. Smart city specialists
4. Public sector transportation authorities
5. Data scientists and AI analysts
6. Civil engineering professionals
7. Autonomous vehicle researchers
8. ITS solution developers and technology integrators

Course Modules

Module 1: Foundations of Intelligent Transportation Systems

- Evolution of ITS technologies
- Core ITS architecture and global standards
- Digital mobility ecosystems overview
- Key components of smart infrastructure

- Role of data and connectivity in ITS
  Case Study: Japan's Smart Mobility Framework for Urban Traffic Optimization.

Module 2: IoT and Connected Vehicle Technologies

- IoT sensor networks for traffic monitoring
- V2V, V2I, and V2X communication protocols
- Telematics and real-time data acquisition
- Edge computing for low-latency decision-making
- Connected vehicle cybersecurity considerations
  Case Study: U.S. Department of Transportation Connected Vehicle Pilot

Module 3: AI & Machine Learning in Transportation Analytics

- Predictive traffic modeling
- Deep learning for pattern recognition
- Real-time anomaly detection
- Transportation demand forecasting
- Intelligent decision support systems
  Case Study: Google's AI-based Traffic Signal Optimization in Urban Corridors.

Module 4: Smart Traffic Management & Control Systems

- Adaptive traffic signal control systems
- Dynamic lane management
- Incident detection and response automation
- Congestion management techniques
- Integrated multimodal transportation control centers
  Case Study: Singapore's AI-driven Expressway Monitoring System.

Module 5: Autonomous & Electric Mobility Ecosystems

- Levels of vehicle automation
- Sensor fusion and navigation systems
- EV charging infrastructure planning
- Safety and regulatory frameworks
- Integrating autonomous vehicles into city networks
  Case Study: Waymo Autonomous Taxi Deployment Trials.

Module 6: Urban Mobility Planning & Digital Twins

- Simulation and modeling tools
- Data-driven mobility planning
- Scenario analysis using digital twins
- Infrastructure readiness assessments
- Multimodal optimization strategies
  Case Study: Helsinki's Digital Twin of Urban Transportation Systems.

Module 7: Sustainable Transportation & Green Mobility

- Low-carbon mobility strategies
- Intelligent public transit systems

- Energy-efficient traffic management
- Active mobility and micro-mobility integration
- Urban environmental analytics

  Case Study: Copenhagen's Smart Mobility & Carbon-Neutral Transport Plan.

Module 8: ITS Governance, Policy & Implementation

- National and international ITS policy frameworks
- Stakeholder engagement and project governance
- Data privacy, security, and ethical considerations
- Funding and procurement strategies
- Roadmap for ITS deployment

  Case Study: European Union's ITS Directive Implementation.

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call +254769199797

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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