MERCURY

Road Operations and Maintenance Training Course

13 – 17 December 2026
Cairo (Egypt)



Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

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Road Operations and Maintenance Training Course

Ref: 15924_338698 **Date:** 13 – 17 December 2026 **Location:** Cairo (Egypt) **Fees:** 4000 Euro

Introduction:

The Road Operations and Maintenance training course explores best practices and innovative solutions for managing and maintaining road networks. Drawing on selected European Union experiences, it emphasizes effective road infrastructure planning strategies, the integration of cutting-edge technologies for smart traffic management, and sustainable mobility solutions that promote multimodal transportation systems. Participants will gain insights into optimizing road operations, ensuring network durability, and fostering environmentally friendly mobility options to meet the challenges of modern urban and interurban road management.

The Road Operations and Maintenance training course provides insights into the definition of road maintenance, emphasizing the importance of effective road maintenance systems and the benefits of road maintenance for urban and highway networks. Participants will explore key road maintenance duties, responsibilities, and safety protocols, as well as advanced techniques and methods and the use of specialized road maintenance tools.

This Road Operations and Maintenance course delves into road operations, including city, highway, and construction road maintenance strategies. It addresses road transport operations, road building operations, and essential practices for road maintenance and repair to ensure efficient, durable infrastructure. It is for professionals in road operations and high-road construction and equips attendees to enhance the reliability of road maintenance systems and improve overall transportation infrastructure.

Targeted Groups:

- Road maintenance and operations professionals.
- Civil engineers and infrastructure planners.
- Traffic management specialists.
- Government and local authority officials.
- Transportation and logistics managers.
- Urban mobility and sustainability consultants.
- Project managers in road development.
- Technologists and innovators in transportation systems.
- Contractors and service providers in road maintenance.
- Environmental and sustainability specialists in transport.

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Course Objectives:

At the end of this Road Operations and Maintenance course, the participants will be able to:

- Develop effective planning strategies for road network maintenance.
- Explore best practices in road operations management from the European Union.
- Understand the integration of technology for smart traffic management.
- Learn to implement sustainable mobility solutions in road networks.
- Gain knowledge of multimodal transport integration for improved connectivity.
- Enhance skills in optimizing road operations for efficiency and safety.
- Understand environmental considerations in road maintenance and operations.
- Apply innovative approaches to future-proof road infrastructure.
- Foster collaboration among stakeholders for sustainable road management.
- Equip participants with practical tools for cost-effective road network maintenance.

Targeted Competencies:

By the end of this Road Operations and Maintenance training, the participant's competencies will:

- Strategic planning for road network development and maintenance.
- Implementation of technology-driven traffic management solutions.
- Knowledge of sustainable road mobility and environmental impact reduction.
- Integration of multimodal transport systems for enhanced connectivity.
- Effective use of data and analytics in road operations.
- Risk management and safety protocols in road maintenance.
- Understanding of regulatory and policy frameworks in road management.
- Cost-efficient and resource-effective road maintenance techniques.
- Adoption of smart infrastructure for future-proof road networks.
- Collaborative planning for long-term road network sustainability.

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Course Content:

Unit 1: Effective Planning and Maintenance of Road Networks:

- Introduction to road network planning and its importance.
- Key principles of road maintenance and lifecycle management.
- Identifying factors affecting road network longevity.
- Best practices in routine and preventive maintenance.
- Budgeting for road maintenance and infrastructure projects.
- Case studies from the European Union on long-term road network planning.
- Effective use of road condition monitoring tools.
- Developing a strategic road maintenance plan.
- Risk management and crisis response in road operations.
- Collaboration with stakeholders in the planning process.

Unit 2: Leveraging Technology for Smart Traffic Management:

- Overview of smart traffic management systems.
- Benefits of data collection and analysis in traffic management.
- Using real-time traffic data for decision-making.
- Integrating AI and machine learning for predictive traffic flow.
- Case studies on technology-driven traffic management in the EU.
- Implementation of smart signals and adaptive traffic control systems.
- Use of mobile applications for traffic monitoring and management.
- Traffic management in smart cities: trends and challenges.
- Optimizing public transport systems using traffic management technology.
- Safety enhancements through technology-based traffic solutions.

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Unit 3: Sustainable Mobility Solutions in Road Operations:

- Definition and importance of sustainable mobility in road operations.
- Environmental impact assessment of road operations.
- Green road infrastructure: materials and technologies.
- Promoting alternative energy sources for road transportation.
- Case studies of sustainable mobility practices in the EU.
- Encouraging the use of electric vehicles in road networks.
- Integration of cycling and pedestrian infrastructure into road planning.
- Strategies for reducing road congestion and pollution.
- Long-term sustainability goals for road management.
- Role of public-private partnerships in promoting sustainable mobility.

Unit 4: Multimodal Integration and Transport Networks:

- Understanding multimodal transport systems.
- Benefits of integrating different transport modes: road, rail, air, and sea.
- Creating seamless connectivity for passengers and freight.
- Case studies from the EU on multimodal transport solutions.
- Coordinating road infrastructure with other transport networks.
- Infrastructure planning for multimodal integration.
- Role of digital platforms in coordinating multimodal transport.
- Enhancing intermodal connectivity in urban and rural areas.
- Challenges and opportunities in multimodal transport planning.
- Government policies and frameworks supporting multimodal integration.

Unit 5: Future Trends in Road Operations and Maintenance:

- Emerging technologies in road maintenance and management.
- The role of autonomous vehicles in future road operations.
- Smart roads and infrastructure for future mobility.
- Impact of digital transformation on road network management.
- Innovations in materials for road construction and maintenance.
- Sustainability trends shaping the future of road operations.
- The role of big data in predictive maintenance and traffic flow management.
- Future challenges in road operations and infrastructure.
- Strategies for adapting road management to future needs.
- The evolving role of government and private sector partnerships in road development.