EV Charging Network Management Training Course

Professional Development Training Course Outline

Category	Renewable Energy	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

EV Charging Network Management Training Course is designed to equip professionals with the skills required to plan, deploy, operate, monitor, optimize, and scale electric vehicle (EV) charging infrastructure. As electric mobility accelerates globally, organizations need specialists who understand EV charging networks, smart charging, charging station management systems (CSMS), OCPP, load management, energy optimization, interoperability, roaming, cybersecurity, uptime management, and data-driven operations. This course connects technical knowledge with real-world business applications, helping learners understand how charging networks operate across public charging stations, commercial fleets, workplaces, residential developments, highways, and destination charging environments.

Through hands-on learning, industry scenarios, and case studies, participants will explore the complete lifecycle of an EV charging network—from site assessment and charger selection to network configuration, remote monitoring, preventive maintenance, payment systems, energy management, customer experience, analytics, and network expansion. The course also addresses emerging trends such as AI-powered charging optimization, vehicle-to-grid (V2G), vehicle-to-building (V2B), dynamic load balancing, renewable-energy integration, cloud-based charging platforms, digital twins, predictive maintenance, smart grids, and sustainable mobility. By completing the program, learners will be better prepared to manage reliable, secure, scalable, and commercially viable EV charging ecosystems while supporting the transition toward zero-emission transportation and intelligent energy infrastructure.

Programme Curriculum

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Course Duration

5 days

Course Objectives

By the end of the course, participants will be able to:

1. Understand the architecture and operational lifecycle of EV charging networks and charging infrastructure.
2. Configure and manage Charging Station Management Systems (CSMS) for network-wide operations.
3. Apply OCPP concepts to improve charger interoperability, communication, and remote management.
4. Design effective smart charging and dynamic load-management strategies.
5. Analyze charging-network performance using real-time data, dashboards, KPIs, and analytics.
6. Develop strategies for EV charging uptime, preventive maintenance, fault detection, and remote diagnostics.
7. Evaluate EV charging cybersecurity, data protection, authentication, and access-control requirements.
8. Implement energy optimization through load balancing, time-of-use charging, and renewable-energy integration.
9. Understand EV charging payment, billing, pricing, roaming, and digital customer-experience models.
10. Apply AI, automation, predictive analytics, and IoT to modern charging-network management.
11. Assess opportunities for V2G, V2B, distributed energy resources, and smart-grid integration.
12. Develop scalable strategies for EV fleet charging, depot charging, public charging, and commercial charging networks.
13. Create practical EV charging network business, operational, sustainability, and growth strategies.

Target Audience

1. EV Charging Network Managers
2. Electric Mobility Professionals
3. Energy and Utility Professionals
4. Fleet Managers.
5. Electrical Engineers and Technicians.
6. Technology and IoT Professionals

7. Business Leaders and Entrepreneurs
8. Government, Policy, and Sustainability Professionals

Course Modules

Module 1: EV Charging Ecosystem & Network Fundamentals

- EV charging levels, connector standards, charging modes, and infrastructure architecture.
- AC, DC fast charging, ultra-fast charging, and emerging high-power charging technologies.
- Public, private, workplace, residential, destination, fleet, and highway charging models.
- Roles of CPOs, eMSPs, utilities, OEMs, fleet operators, and technology providers.
- Case Study: Designing an EV charging ecosystem for a rapidly growing urban mobility market.

Module 2: Charging Station Management Systems & OCPP

- Fundamentals of CSMS architecture, cloud platforms, charger connectivity, and device management.
- OCPP communication, charger configuration, transactions, diagnostics, and firmware management.
- Remote monitoring, alerts, status management, and charger command functions.
- Interoperability challenges and strategies for multi-vendor charging networks.
- Case Study: Resolving interoperability and communication failures across a multi-brand charging network.

Module 3: Smart Charging, Load Management & Energy Optimization

- Smart charging principles and dynamic load balancing.
- Peak-demand management, time-of-use tariffs, and charging schedules.
- Renewable-energy integration with solar, battery storage, and EV charging.
- Intelligent energy allocation for commercial sites and large EV depots.
- Case Study: Optimizing electricity demand for a 100-vehicle electric fleet depot.

Module 4: Network Operations, Monitoring & Predictive Maintenance

- Charging-network KPIs including uptime, utilization, availability, MTBF, and session success rate.
- Real-time monitoring through cloud dashboards and operational control centers.
- Fault detection, remote diagnostics, maintenance workflows, and service-level management.
- Predictive maintenance using IoT sensors, analytics, and AI-enabled anomaly detection.
- Case Study: Increasing charging-network uptime through automated fault monitoring and predictive maintenance.

Module 5: EV Charging Payments, Roaming & Customer Experience

- EV charging pricing, tariffs, subscriptions, pay-as-you-go, and fleet billing models.
- Digital payments, RFID, mobile apps, QR codes, authentication, and access control.
- eMSP, CPO, roaming, interoperability, and cross-network charging concepts.
- Customer experience, session reliability, digital support, and complaint management.
- Case Study: Developing a customer-centric payment and roaming strategy for a regional charging network.

Module 6: Cybersecurity, Data Management & Network Resilience

- EV charging cybersecurity risks across chargers, networks, APIs, cloud systems, and mobile applications.

- Identity management, secure communication, access control, encryption, and incident response.
- Data governance, privacy, operational technology security, and secure firmware management.
- Cybersecurity monitoring and resilience strategies for distributed charging infrastructure.
- Case Study: Building a cybersecurity response plan following a simulated charging-network attack.

Module 7: AI, Analytics, V2G & Smart-Grid Integration

- Applications of AI and machine learning in demand forecasting and charging optimization.
- Predictive analytics for utilization, maintenance, pricing, and network expansion.
- Vehicle-to-Grid (V2G), Vehicle-to-Building (V2B), and bidirectional charging fundamentals.
- Integration of EV charging with smart grids, distributed energy resources, and battery storage.
- Case Study: Using intelligent charging and V2G to support grid flexibility and reduce energy costs.

Module 8: EV Charging Network Strategy, Scaling & Business Models

- Site selection, network planning, charger deployment, capacity forecasting, and scalability.
- CAPEX, OPEX, utilization, revenue models, ROI, and total cost of ownership (TCO).
- Fleet electrification, public charging expansion, partnerships, and infrastructure financing.
- Sustainability, ESG, carbon reduction, and long-term electric-mobility strategy.
- Case Study: Creating a five-year expansion strategy for a nationwide EV charging network.

Training Methodology

- 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

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