

ELECTRICAL NETWORKS DESIGN, PROTECTION, AND OPERATION

"Master the design, protection, and operational management of electrical networks for safe and reliable power distribution"

Schedule

Date	Venue	Fees (Face-to-Face)
14 - 16 Dec 2026	Doha, Qatar	USD 2495 per delegate

► **Available delivery methods:** Face-to-Face & Online Training

Introduction

Designing and operating electrical networks efficiently while ensuring safety and reliability is critical for any organization. This 3-day face-to-face training equips participants with in-depth knowledge and practical skills to design electrical networks, implement protection systems, and manage operations effectively.

Through a mix of theoretical sessions, case studies, and hands-on workshops, participants will gain expertise in network design principles, protective devices, and operational strategies. By the end of the course, attendees will be able to optimize electrical network performance and ensure compliance with industry standards.

Objectives

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

- Understand the fundamentals of electrical network design and operation.
- Apply protection systems to safeguard equipment and ensure system reliability.
- Analyze and troubleshoot network issues effectively.
- Implement best practices for network operation, monitoring, and maintenance.
- Enhance safety, reliability, and efficiency of electrical networks.

Why Attend

- Gain practical knowledge in designing, protecting, and operating electrical networks.
- Learn techniques to enhance reliability and efficiency of power systems.
- Develop skills to troubleshoot and optimize network performance.
- Improve compliance with industry standards and safety regulations.
- Network with professionals in electrical engineering and power systems.

Target Audience

This program is designed for:

- Electrical engineers and technicians.
- Power system designers and planners.
- Operations and maintenance personnel in electrical networks.
- Professionals involved in network protection, monitoring, and optimization.

Individual Benefits

Key competencies that will be developed include:

- Skills in electrical network design and operational planning.
- Expertise in protective devices, relays, and safety systems.
- Ability to monitor, troubleshoot, and optimize network performance.
- Knowledge of industry standards and best practices for electrical networks.

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved network reliability, safety, and efficiency.
- Enhanced capability to prevent faults and minimize downtime.
- Optimized operational processes for electrical systems.
- Reduced operational risks and improved compliance with safety standards.

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings - Principles of network design, protection systems, and operational management.
- Case Studies - Real-world examples of electrical network challenges and solutions.
- Workshops - Hands-on exercises in network design, protection setup, and troubleshooting.
- Peer Exchange - Group discussions on operational challenges and lessons learned.
- Tools - Templates, calculation aids, and guidelines for electrical network management.

Course Outline

Detailed 3-Day Course Outline

Training Hours: 9:00 AM - 5:00 PM Daily Format: 3-4 Learning Modules | Coffee Breaks & Lunch included

Day 1: Fundamentals of Electrical Networks (09:00 - 04:00)

Module 1: Network Design Principles (09:00 - 11:00)

- Overview of electrical networks and design methodology.

Module 2: Load Analysis and Planning (11:15 - 01:00)

- Calculating loads, network sizing, and planning.

Module 3: Protection Fundamentals (02:00 - 04:00)

- Introduction to protective devices, relays, and coordination.

Day 2: Protection Systems and Operation (09:00 - 04:00)

Module 4: Advanced Protection Techniques (09:00 - 11:00)

- Protection schemes, fault analysis, and relay coordination.

Module 5: Network Operation and Monitoring (11:15 - 01:00)

- Operational strategies, SCADA, and system monitoring.

Module 6: Workshops and Practical Exercises (02:00 - 04:00)

- Hands-on exercises in network protection and operational scenarios.

Day 3: Troubleshooting and Optimization (09:00 - 04:00)

Module 7: Fault Analysis and Troubleshooting (09:00 - 11:00)

- Identifying and resolving network faults.

Module 8: Optimization of Electrical Networks (11:15 - 01:00)

- Techniques to improve efficiency, reliability, and safety.

Module 9: Case Studies and Action Planning (02:00 - 04:00)

- Practical applications, lessons learned, and implementation planning.

Certification

Participants will receive a Certificate of Completion in Electrical Networks Design, Protection, and Operation, validating their expertise in designing, protecting, and managing electrical networks safely and efficiently.

Why Choose MAWA Events

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Interested in running this course for your team?

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