

# MAINTENANCE AND TROUBLE SHOOTING OF UPS SYSTEM AND BATTERY POWER SUPPLIES

*“Ensuring Power Continuity, Reliability, and Critical Load Protection”*

## Schedule

Date	Venue	Fees (Face-to-Face)
24 - 26 Nov 2026	Doha, Qatar	USD 2495 per delegate

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

## Introduction

Uninterruptible Power Supply (UPS) systems and battery power supplies are critical for ensuring continuous power to sensitive and mission-critical equipment in industries such as data centers, healthcare, oil & gas, and utilities. Failures in UPS systems or batteries can lead to data loss, equipment damage, and operational downtime.

This intensive 3-day training provides participants with comprehensive knowledge of UPS technologies, battery systems, maintenance practices, and troubleshooting techniques. The course focuses on practical methods to improve system reliability, extend battery life, and ensure safe and efficient operation in accordance with international standards and best practices.

## Objectives

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

- Understand UPS system configurations and operating principles
- Identify different battery technologies and their applications
- Apply preventive and predictive maintenance practices
- Diagnose common UPS and battery faults
- Perform inspection, testing, and performance evaluation
- Implement safe handling and maintenance procedures
- Improve reliability and availability of critical power systems

## Why Attend

- Gain in-depth understanding of UPS and battery systems
- Learn practical maintenance and troubleshooting techniques
- Reduce system failures and unplanned downtime
- Extend battery life and optimize performance
- Improve safety and compliance with standards
- Enhance skills in managing critical power infrastructure

## Target Audience

This program is designed for:

- Electrical and power engineers
- Maintenance and reliability engineers
- Electrical technicians and supervisors
- Data center and facilities engineers
- Operations and technical support personnel
- Professionals responsible for critical power systems

## Individual Benefits

Key competencies that will be developed include:

- Strong understanding of UPS architectures and battery technologies
- Ability to troubleshoot UPS and battery system faults
- Improved maintenance planning and execution skills
- Enhanced safety awareness in battery handling
- Better decision-making for system upgrades and replacements
- Professional growth in critical power systems management

## Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved reliability and availability of UPS systems
- Reduced downtime and operational disruptions
- Extended battery service life and reduced replacement costs
- Enhanced safety and regulatory compliance
- Optimized maintenance strategies for critical power assets
- Increased protection of sensitive and mission-critical equipment

## Instructional Methodology

The course follows a blended learning approach combining theory with practical application:

- Technical Briefings - UPS technologies, battery systems, and power continuity principles
- Case Studies - Real-world UPS and battery failures and lessons learned
- Workshops - Maintenance planning, inspection checklists, and fault diagnosis
- Peer Exchange - Group discussions on operational challenges and solutions
- Tools - Maintenance templates, testing procedures, and troubleshooting guides

## MAWA EVENTS

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## Course Outline

### Detailed 3-Day Course Outline

Training Hours: 7:30 AM – 3:30 PM Daily Format: 3–4 Learning Modules Coffee Breaks: 09:30 & 11:15 Lunch Buffet: 01:00 – 02:00

#### Day 1: UPS Systems Fundamentals and Maintenance

##### Module 1: Overview of UPS Systems (07:30 – 09:30)

- Role of UPS systems in critical power applications
- Types of UPS systems (Offline, Line-Interactive, Online)
- UPS components and operating principles

##### Module 2: UPS System Operation and Configurations

- Single vs. parallel UPS systems
- Redundancy and scalability (N+1 configurations)
- Environmental and load considerations

##### Module 3: UPS Maintenance Practices

- Preventive maintenance schedules
- Inspection and housekeeping
- Performance monitoring

#### Day 2: Battery Power Supplies and Testing

##### Module 1: Battery Technologies and Characteristics

- Lead-acid (VRLA, flooded) and lithium-ion batteries
- Battery ratings, capacity, and life expectancy
- Charging methods and battery management systems

##### Module 2: Battery Inspection and Testing

- Visual inspection and safety checks
- Voltage, impedance, and capacity testing
- Interpreting test results

##### Module 3: Battery Maintenance and Safety

- Proper handling and storage
- Safety risks and mitigation measures
- Battery room standards and ventilation

#### Day 3: Troubleshooting, Reliability, and Best Practices

##### Module 1: UPS and Battery Troubleshooting

- Common UPS alarms and faults
- Battery failures and degradation symptoms
- Root cause analysis

##### Module 2: Reliability Improvement and Lifecycle Management

- Condition-based maintenance
- Replacement and upgrade planning
- Spare parts and obsolescence management

##### Module 3: Standards, Best Practices, and Course Review

- Relevant international standards and guidelines
- Best practices for critical power systems
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Key takeaways and action planning

### Certification

Participants will receive a Certificate of Completion in Maintenance and Troubleshooting of UPS Systems and Battery Power Supplies, validating their technical knowledge and practical competence in managing, maintaining, and troubleshooting critical power infrastructure.

### Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

<p><b>In-House / Customized Training</b></p> <p>Interested in running this course for your team?</p> <p>Please contact us:</p>	<p>TEL:</p> <p><b>+601116373203</b></p>	<p>EMAIL:</p> <p><b>info@mawaevents.net</b></p>
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