MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

SMART GRID TECHNOLOGIES & POWER SYSTEMS AUTOMATION

"Empowering the Future of Energy with Smart Grids and Automated Power Systems"

Schedule

Date	Venue	Fees (Face-to-Face)
08 – 10 Sep 2026	Riyadh, KSA	USD 2495 per delegate

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

Introduction

The energy sector is undergoing a significant transformation with the integration of smart grid technologies and advanced automation in power systems. This course provides participants with a comprehensive understanding of smart grid principles, intelligent energy management, and automation technologies that enhance reliability, efficiency, and sustainability of power networks.

Participants will explore both theoretical concepts and practical applications, including real-time monitoring, control systems, and data-driven decision-making. The program equips engineers and technical professionals with the skills to implement, optimize, and manage modern power systems in alignment with global standards.

Objectives

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

- Understand the architecture and components of smart grids
- Apply automation techniques to power systems for enhanced reliability
- Analyze and interpret data from intelligent grid monitoring systems
- Design strategies for energy efficiency and sustainable power management
- Integrate renewable energy sources into smart grid frameworks
- Improve operational performance and resilience of power networks

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Why Attend

- Gain hands-on knowledge of smart grid technologies and power system automation
- Enhance decision-making using real-time monitoring and analytics
- Learn best practices for integrating renewable energy sources
- Understand the regulatory and technical requirements of modern power networks
- Network with peers and industry experts in electrical and electronics engineering

Target Audience

This program is designed for:

- Electrical engineers and power system professionals
- Smart grid and automation specialists
- Energy management and utility professionals
- Technical consultants and project managers in power systems
- Researchers and academics interested in smart grid technologies

Individual Benefits

Key competencies that will be developed include:

- In-depth understanding of smart grid architecture and automation systems
- Skills in power system monitoring, control, and optimization
- Ability to implement energy-efficient strategies in power networks
- Knowledge of integrating renewable energy sources into automated grids
- Competence in analyzing operational data and improving system reliability

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Enhanced efficiency and reliability of power networks
- Reduced operational downtime through automated monitoring
- Improved integration of renewable energy solutions
- Stronger compliance with international energy and grid standards
- Optimized resource utilization and operational performance

Instructional Methodology

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

- Strategy Briefings – In-depth overview of smart grid technologies and power system automation principles
- Case Studies – Real-world examples of smart grid implementation and automation projects
- Workshops – Hands-on exercises in grid monitoring, automation, and control systems
- Peer Exchange – Group discussions on technical challenges and lessons learned
- Tools – Templates and software simulations for smart grid planning and automation

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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: Fundamentals of Smart Grids

Module 1: Introduction to Smart Grid Technologies (07:30 – 09:30)

- Overview of smart grid concepts and benefits
- Key components: sensors, meters, communication networks
- Global trends and case studies

Module 2: Power System Automation Principles (09:45 – 11:15)

- Automation architectures for transmission and distribution networks
- SCADA systems and supervisory control strategies

Module 3: Data Acquisition and Monitoring (11:30 – 01:00)

- Sensors, measurement devices, and data analytics
- Real-time monitoring and fault detection

Module 4: Workshop – Smart Grid Tools (02:00 – 03:30)

- Hands-on exercises with smart grid simulation tools
- Practical demonstration of automated control systems

Day 2: Advanced Automation & Renewable Integration

Module 1: Intelligent Control Systems (07:30 – 09:30)

- Automated fault detection and response
- Load management and energy optimization

Module 2: Renewable Energy Integration (09:45 – 11:15)

- Grid-connected renewable energy systems
- Challenges in maintaining stability and reliability

Module 3: Cybersecurity in Smart Grids (11:30 – 01:00)

- Risks and mitigation strategies
- Ensuring secure communication and data integrity

Module 4: Workshop – Automation Implementation (02:00 – 03:30)

- Designing control strategies for real-time operation
- Simulation of automated response scenarios

Day 3: Performance Optimization and Future Trends

Module 1: Grid Performance Evaluation (07:30 – 09:30)

- Key metrics for reliability and efficiency
- Data-driven optimization techniques

Module 2: Smart Grid Case Studies (09:45 – 11:15)

- Global implementations and success stories
- Lessons learned and best practices

Module 3: Emerging Technologies (11:30 – 01:00)

- AI, IoT, and big data applications in smart grids
- Future directions and innovation trends

Module 4: Wrap-Up & Action Planning (02:00 – 03:30)

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Individual action plans for implementation

- Q&A and knowledge assessment

Certification

Participants will receive a Certificate of Completion in Smart Grid Technologies & Power Systems Automation, validating their expertise in modern smart grid architecture, power system automation, and energy management strategies.

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.

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

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