MAWA EVENTS

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

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HEATING, VENTILATION & AIR-CONDITIONING (HVAC) DESIGN, OPERATION & MAINTENANCE

"Optimizing HVAC System Efficiency, Reliability, and Comfort through Best Practices in Design and Maintenance"

Schedule

Date	Venue	Fees (Face-to-Face)
15 – 17 Dec 2026	Manama – Bahrain	USD 2495 per delegate

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

Introduction

HVAC systems play a vital role in ensuring indoor air quality, thermal comfort, and energy efficiency in residential, commercial, and industrial buildings. Poor design or maintenance can lead to increased energy consumption, reduced occupant comfort, and system failures.

This 3-day technical training course provides a comprehensive overview of HVAC design principles, operational strategies, and maintenance best practices. Participants will learn how to evaluate system components, optimize performance, troubleshoot issues, and apply preventive maintenance to reduce downtime and energy use.

Objectives

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

- Understand key HVAC system components and design parameters
- Apply ASHRAE standards in HVAC design and operation
- Diagnose and troubleshoot common HVAC performance issues
- Develop and execute preventive maintenance plans for HVAC equipment
- Optimize HVAC systems for energy efficiency and occupant comfort

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Why Attend

- Gain essential knowledge of HVAC system design and functionality
- Improve system efficiency through proactive maintenance and operation
- Enhance reliability and service life of HVAC equipment
- Minimize energy waste and indoor air quality issues
- Apply international best practices in real-world HVAC applications

Target Audience

This program is designed for:

- Facility and maintenance engineers
- Mechanical and HVAC design engineers
- Building operations and plant technicians
- Energy and sustainability professionals
- Project managers and consultants working in MEP systems

Individual Benefits

Key competencies that will be developed include:

- HVAC system design fundamentals and performance analysis
- Preventive and corrective maintenance procedures
- Troubleshooting airflow, temperature control, and humidity issues
- Energy-saving strategies for HVAC optimization
- Knowledge of HVAC-related safety and compliance standards

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Reduced HVAC-related energy and maintenance costs
- Enhanced equipment reliability and system uptime
- Improved occupant comfort and indoor air quality
- Better maintenance planning and fault response capability
- Alignment with green building and energy efficiency goals

Instructional Methodology

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

- Strategy Briefings: HVAC system design, airflow principles, and compliance standards
- Case Studies: Building HVAC system audits and operational analysis
- Workshops: Troubleshooting scenarios and maintenance planning
- Peer Exchange: Best practices from different sectors and building types
- Tools: HVAC checklist templates, maintenance logs, and inspection protocols

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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: HVAC Design Fundamentals

- Module 1: Overview of HVAC Systems and Components (07:30 – 09:30) • System classifications, air distribution, and control systems
- Module 2: HVAC Load Calculations and Sizing (09:45 – 11:15) • Heating and cooling loads, psychrometric analysis
- Module 3: Workshop – HVAC System Design Evaluation (11:30 – 01:00) • Assess equipment sizing based on a sample layout
- Module 4: Case Study – Design Pitfalls and Optimization (02:00 – 03:30) • Learn from real-world design challenges

Day 2: Operation, Control & Energy Efficiency

- Module 5: HVAC Control Systems and Automation (07:30 – 09:30) • Thermostats, VAV systems, BMS integration
- Module 6: Indoor Air Quality and Ventilation Strategies (09:45 – 11:15) • Filtration, air changes, CO_2 control
- Module 7: Workshop – Energy Audit and Efficiency Measures (11:30 – 01:00) • Identify areas of improvement for HVAC energy use
- Module 8: Peer Exchange – HVAC Performance Issues (02:00 – 03:30) • Share operational challenges and field solutions

Day 3: Maintenance Planning and Troubleshooting

- Module 9: Preventive and Predictive HVAC Maintenance (07:30 – 09:30) • Maintenance scheduling, key tasks, and recordkeeping
- Module 10: Troubleshooting Common HVAC Problems (09:45 – 11:15) • Compressor failure, poor airflow, refrigerant issues
- Module 11: Workshop – Develop a Maintenance Checklist (11:30 – 01:00) • Create a plan for HVAC system inspection and servicing
- Module 12: Wrap-Up, Feedback, and Certification (02:00 – 03:30) • Final Q&A, review, and certificate awarding

Certification

Participants will receive a Certificate of Completion in HVAC Design, Operation & Maintenance, validating their knowledge in designing, operating, and maintaining HVAC systems in accordance with best practices and international standards.

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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