MAWA EVENTS

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

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

STATIC EQUIPMENT: PIPING, VALVES, VESSELS AND HEAT EXCHANGERS

"Comprehensive Knowledge for Design, Operation, and Maintenance of Static Equipment"

Schedule

Date	Venue	Fees (Online)
26 – 30 Jul 2026	Online	USD 1500 per delegate

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

Introduction

Static equipment—including piping systems, valves, pressure vessels, and heat exchangers—is critical to safe and efficient industrial operations. Failures in these components can lead to costly downtime, safety incidents, and environmental risks. A thorough understanding of design, operation, inspection, and maintenance practices is essential for engineers and maintenance professionals.

This intensive 5-day online course provides participants with detailed knowledge and practical skills to manage static equipment effectively. Participants will learn industry standards, operational considerations, maintenance strategies, and troubleshooting techniques to ensure reliable performance and compliance with safety and regulatory requirements.

Objectives

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

- Understand the design principles and operational requirements of static equipment
- Select, install, and maintain piping systems, valves, vessels, and heat exchangers
- Conduct inspection, troubleshooting, and preventive maintenance
- Apply industry standards, codes, and best practices for static equipment
- Identify common failures and implement corrective actions
- Enhance equipment reliability, safety, and operational efficiency

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Why Attend

- Gain practical expertise in static equipment design, operation, and maintenance
- Improve safety, reliability, and efficiency of industrial systems
- Learn industry best practices and standards
- Reduce unplanned downtime and operational risks
- Enhance decision-making in equipment management and maintenance planning

Target Audience

This program is designed for:

- Mechanical, process, and maintenance engineers
- Reliability and asset management professionals
- Operations and maintenance supervisors
- Project engineers and plant managers
- Technicians involved in inspection, operation, and maintenance of static equipment

Individual Benefits

Key competencies that will be developed include:

- Understanding of static equipment design and operational principles
- Ability to perform inspection, maintenance, and troubleshooting
- Knowledge of industry codes, standards, and best practices
- Skills to prevent failures and optimize equipment performance
- Enhanced decision-making in equipment lifecycle management

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved operational reliability and equipment uptime
- Enhanced safety and compliance with standards
- Reduced maintenance costs and unplanned shutdowns
- Strengthened asset management and performance monitoring
- Efficient implementation of preventive and predictive maintenance strategies

Instructional Methodology

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

- Strategy Briefings – Design, operation, and maintenance principles for static equipment
- Case Studies – Real-world examples of failures, inspections, and corrective actions
- Workshops – Hands-on exercises on troubleshooting, inspection, and maintenance planning
- Peer Exchange – Group discussions on operational challenges and lessons learned
- Tools – Inspection checklists, maintenance schedules, and troubleshooting guides

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Course Outline

Detailed 5-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: Introduction and Piping Systems

Module 1: Overview of Static Equipment (07:30 – 09:30)

- Types and functions of static equipment
- Key design and operational considerations
- Safety and reliability aspects

Module 2: Piping Systems Design and Operation (09:45 – 11:15)

- Materials, layout, and sizing of pipes
- Stress analysis and expansion considerations
- Codes and standards

Module 3: Piping Inspection and Maintenance (11:30 – 01:00)

- Common failures and prevention techniques
- Inspection methods and tools
- Maintenance strategies

Module 4: Workshop – Piping System Case Study (02:00 – 03:30)

- Analysis of piping failures and corrective actions

Day 2: Valves – Selection, Operation, and Maintenance

Module 5: Valve Types and Functions (07:30 – 09:30)

- Gate, globe, ball, check, and control valves
- Selection criteria and operational requirements

Module 6: Valve Inspection and Troubleshooting (09:45 – 11:15)

- Common operational issues and failures
- Maintenance best practices
- Testing and performance evaluation

Module 7: Workshop – Valve Maintenance Exercise (11:30 – 01:00)

- Hands-on valve troubleshooting and preventive strategies

Module 8: Case Study – Valve Failure Analysis (02:00 – 03:30)

- Root cause analysis of real-world valve issues

Day 3: Pressure Vessels – Design and Safety

Module 8: Pressure Vessel Fundamentals (07:30 – 09:30)

- Design principles and codes (ASME, API)
- Materials selection and fabrication

Module 9: Operation and Inspection (09:45 – 11:15)

- Pressure testing and non-destructive examination (NDE)
- Safety devices and operational monitoring

Module 10: Maintenance and Troubleshooting (11:30 – 01:00)

- Common failures and preventive measures
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Documentation and record-keeping

Module 11: Workshop – Vessel Inspection Simulation (02:00 – 03:30)

- Inspection techniques and failure identification

Day 4: Heat Exchangers – Operation and Maintenance

Module 12: Heat Exchanger Types and Selection (07:30 – 09:30)

- Shell-and-tube, plate, and air-cooled exchangers
- Design and thermal considerations

Module 13: Operational Issues and Troubleshooting (09:45 – 11:15)

- Fouling, corrosion, and leak detection
- Performance monitoring and maintenance planning

Module 14: Workshop – Heat Exchanger Analysis (11:30 – 01:00)

- Diagnosing operational issues and proposing solutions

Module 15: Case Study – Heat Exchanger Failures (02:00 – 03:30)

- Lessons learned from industry incidents

Day 5: Integrated Maintenance and Best Practices

Module 16: Preventive and Predictive Maintenance (07:30 – 09:30)

- Strategies for static equipment
- Maintenance scheduling and tracking

Module 17: Risk Management and Safety Considerations (09:45 – 11:15)

- Risk assessment and mitigation
- Compliance with codes and standards

Module 18: Workshop – Integrated Maintenance Plan (11:30 – 01:00)

- Developing a complete maintenance plan for static equipment

Module 19: Final Review and Q&A (02:00 – 03:30)

- Recap of key learnings
- Action plan for implementation in workplace

Certification

Participants will receive a Certificate of Completion in Static Equipment: Piping, Valves, Vessels, and Heat Exchangers, validating their expertise in design, operation, inspection, and maintenance of critical industrial static equipment.

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.

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