MAWA EVENTS

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

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

WELDING TECHNOLOGY & INSPECTION METHOD

"Master Welding Processes, Quality Control Techniques & Inspection Standards for Structural Integrity"

Schedule

Date	Venue	Fees (Face-to-Face)
18 – 22 Oct 2026	Doha, Qatar	USD 3495 per delegate

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

Introduction

Welding is a critical process in construction, manufacturing, oil & gas, and power sectors, where structural integrity and safety are paramount. Proper welding techniques combined with effective inspection methods ensure long-term performance, regulatory compliance, and risk mitigation.

This comprehensive 5-day course equips participants with essential knowledge of welding processes, metallurgy, defect types, and inspection techniques. It combines theory with practical examples to help engineers, inspectors, and supervisors ensure welding quality from planning to post-weld testing.

Objectives

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

- Understand fundamental welding processes, positions, and joint designs
- Identify common welding defects and their causes
- Interpret welding procedures, codes, and material specifications
- Apply visual, destructive, and non-destructive inspection techniques
- Ensure compliance with quality standards and safety regulations in welding

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Why Attend

- Improve your knowledge of welding technologies and quality requirements
- Learn to prevent weld-related failures and ensure structural soundness
- Gain expertise in interpreting WPS, PQR, and welding symbols
- Understand inspection roles in pre-weld, in-process, and post-weld stages
- Ensure compliance with ASME, API, AWS, and ISO welding codes

Target Audience

This program is designed for:

- Welding engineers, supervisors, and inspectors
- Quality control and assurance professionals
- Plant, maintenance, and fabrication engineers
- Construction and project engineers
- Anyone responsible for welding activities or inspection in industrial environments

Individual Benefits

Key competencies that will be developed include:

- Welding process selection and application
- Identification and classification of weld discontinuities
- Interpretation of welding documentation and symbols
- Application of NDT methods (VT, PT, MT, UT, RT)
- Quality control, recordkeeping, and compliance skills

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved weld quality and reduced rework or failure rates
- Increased compliance with industry codes and inspection standards
- Safer operations and extended asset lifecycle
- More effective coordination between welding, engineering, and inspection teams
- Reduced project delays due to welding defects or inspection failures

Instructional Methodology

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

- Strategy Briefings – Welding technologies, standards, and documentation overview
- Case Studies – Failure analysis due to poor welding and inspection practices
- Workshops – WPS review, defect interpretation, and symbol exercises
- Peer Exchange – Discussion on field challenges and inspection planning
- Tools – Weld defect charts, inspection checklists, and NDT method 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: Welding Fundamentals and Processes

- Module 1: Introduction to Welding Technology (07:30 – 09:30) • Principles of welding and arc generation • Overview of welding applications and hazards
- Module 2: Welding Processes & Techniques (09:45 – 11:15) • SMAW, GTAW, GMAW, FCAW, SAW, and others • Joint types, weld positions, and filler materials
- Module 3: Workshop – Welding Symbols & WPS Interpretation (11:30 – 01:00) • Symbols, abbreviations, and reading WPS/PQR
- Module 4: Welding Codes and Standards (02:00 – 03:30) • ASME, AWS, ISO, and API welding references

Day 2: Metallurgy and Weld Defects

- Module 1: Welding Metallurgy Basics (07:30 – 09:30) • Heat-affected zone (HAZ), base and filler material behavior • Preheat, interpass temperature, and post-weld heat treatment
- Module 2: Weld Discontinuities and Defects (09:45 – 11:15) • Porosity, cracks, undercut, lack of fusion, and more
- Module 3: Workshop – Defect Identification and Causes (11:30 – 01:00) • Visual recognition and classification of discontinuities
- Module 4: Peer Discussion – Field Case Examples (02:00 – 03:30) • Group evaluation of real defect scenarios

Day 3: Visual and Destructive Inspection Techniques

- Module 1: Visual Testing (VT) and Inspection Preparation (07:30 – 09:30) • VT criteria and lighting, access, tools
- Module 2: Destructive Testing (DT) Methods (09:45 – 11:15) • Tensile, bend, impact, and macroetch testing
- Module 3: Workshop – Visual Inspection Practice (11:30 – 01:00) • Defect logging and documentation techniques
- Module 4: Quality Records and Inspection Documentation (02:00 – 03:30) • Inspection plans, weld maps, and QC forms

Day 4: Non-Destructive Testing (NDT) Methods

- Module 1: Liquid Penetrant Testing (PT) & Magnetic Particle Testing (MT) (07:30 – 09:30) • Surface defect detection techniques and procedures
- Module 2: Ultrasonic Testing (UT) & Radiographic Testing (RT) (09:45 – 11:15) • Internal defect detection, scan interpretation, and image analysis
- Module 3: Workshop – NDT Procedure Review (11:30 – 01:00) • Selecting appropriate methods for weld types and materials
- Module 4: Group Exercise – Inspection Technique Selection (02:00 – 03:30) • Compare DT vs. NDT for various welding scenarios

Day 5: Inspection Strategy, Safety & Certification Preparation

- Module 1: Developing an Inspection Strategy (07:30 – 09:30) • Inspection stages: pre-weld, in-process, and post-weld • Risk-based and code-driven inspection plans
- Module 2: Welding Safety & Risk Management (09:45 – 11:15) • PPE, fume hazards, hot work permits, and fire prevention
- Module 3: Final Workshop – Weld Quality Case Simulation (11:30 – 01:00) • Review inspection findings and prepare QA report
- Module 4: Certification Review & Course Wrap-Up (02:00 – 03:30) • Participant Q&A and final knowledge check

Certification

Participants will receive a Certificate of Completion in Welding Technology & Inspection Method, validating their knowledge in modern welding practices, inspection methods, defect detection, and compliance with international welding codes and standards.

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Why Choose MAWA Events

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