MAWA EVENTS

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

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

OIL & GAS FACILITIES ENGINEERING & MANAGEMENT – ONSHORE GAS PLANT & REFINERIES, OFFSHORE TOPSIDES & SUBSEA EQUIPMENT

"Comprehensive Engineering, Integrity & Operations Management of Oil & Gas Production Facilities"

Schedule

Venue (InHouse)	Fees
At Your Organization Premises	Ask For The Quotation

► **Available delivery methods:** In-House Training

Introduction

The oil and gas industry depends on highly specialized facilities—from onshore gas processing plants and refineries to offshore platforms and subsea infrastructure. Engineering and managing these facilities demand deep technical knowledge, multidisciplinary coordination, and adherence to strict safety and environmental standards.

This intensive course delivers practical and up-to-date knowledge of the design, operation, maintenance, and integrity management of upstream and downstream facilities. It covers topsides, subsea systems, pipelines, rotating equipment, utilities, and control systems to help engineers and managers optimize reliability, safety, and efficiency.

Objectives

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

- Understand the architecture and operation of oil & gas production facilities
- Differentiate between onshore and offshore systems and their engineering challenges
- Apply safety, reliability, and integrity principles to plant and equipment
- Interpret PFDs, P&IDs, and layout drawings of facilities
- Manage facility interfaces, maintenance programs, and upgrades
- Align engineering solutions with regulatory and environmental compliance

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Why Attend

- Learn how integrated oil and gas systems function, from wells to export
- Build your competence in processing, utilities, and rotating equipment
- Gain tools for managing asset integrity, corrosion, and failure risks
- Receive structured knowledge applicable to FEED, EPC, O&M, and brownfield upgrades
- Participate in scenario-based workshops on troubleshooting and optimization

Target Audience

This program is designed for:

- Facilities engineers and project engineers
- Maintenance and operations managers
- Offshore platform engineers and supervisors
- Subsea and pipeline engineers
- HSE and reliability professionals
- Technical consultants and asset managers

Individual Benefits

Key competencies that will be developed include:

- Systems-level understanding of upstream and downstream facilities
- Familiarity with plant drawings, pressure systems, and piping layouts
- Knowledge of rotating equipment, separation processes, and process control
- Skills to troubleshoot facility performance issues
- Awareness of HSE, environmental, and compliance frameworks

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved operational uptime and reduced downtime
- Better engineering decision-making across facility lifecycles
- Enhanced safety and environmental performance
- Optimized O&M planning, inspections, and reliability programs
- Stronger technical collaboration across multi-disciplinary teams

Instructional Methodology

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

- Strategy Briefings – Detailed insights into gas plant design, offshore systems, and subsea infrastructure
- Case Studies – Facility failures, upgrades, and project learnings from major oil & gas operators
- Workshops – Facility drawings analysis, troubleshooting cases, and risk assessments
- Peer Exchange – Lessons learned and engineering approaches from global facilities
- Tools – Templates for inspection plans, asset integrity KPIs, and plant operation tracking

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Course Outline

DETAILED 5-DAY COURSE OUTLINE (CUSTOMIZABLE)

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: Overview of Oil & Gas Production Facilities

- Module 1: Facility Types and Process Flow (07:30 – 09:30)
- Overview of onshore plants, offshore topsides, FPSOs, subsea systems
- Process flow diagrams (PFDs) and functional elements
- Module 2: Onshore Facilities – Gas Plants & Refineries (09:45 – 11:15)
- Gas separation, dehydration, sweetening, fractionation, and refining
- Module 3: Utility Systems and Control Systems (11:30 – 01:00)
- Power, water, HVAC, instrument air, flare systems, SCADA/DCS
- Module 4: Workshop – Interpreting PFDs and Plant Layouts (02:00 – 03:30)

Day 2: Offshore Topsides Engineering

- Module 1: Offshore Processing – Well Fluids to Export (07:30 – 09:30)
- Separation trains, compression, export pumping, chemical injection
- Module 2: Structural & Mechanical Engineering for Offshore Platforms (09:45 – 11:15)
- Platform decks, flare towers, cranes, living quarters
- Module 3: Safety Systems – ESD, F&G, and Emergency Shutdown (11:30 – 01:00)
- Safety Instrumented Systems (SIS) and barrier management
- Module 4: Workshop – Emergency Systems and Equipment Layouts (02:00 – 03:30)

Day 3: Subsea Equipment & Pipeline Systems

- Module 1: Subsea Architecture and Components (07:30 – 09:30)
- Trees, manifolds, umbilicals, risers, controls
- Module 2: Subsea Production Challenges and Monitoring (09:45 – 11:15)
- Flow assurance, hydrate formation, pigging, leak detection
- Module 3: Pipeline Integrity and Protection Systems (11:30 – 01:00)
- Cathodic protection, trenching, pressure monitoring
- Module 4: Workshop – Subsea Tieback Planning (02:00 – 03:30)

Day 4: Rotating Equipment, Operations & Reliability

- Module 1: Compressors, Pumps, and Turbines (07:30 – 09:30)
- Selection, operation, troubleshooting, vibration monitoring
- Module 2: Operations, Maintenance, and Reliability Engineering (09:45 – 11:15)
- Maintenance strategies (PM, PdM, RCM), CMMS tools
- Module 3: Root Cause Analysis and Equipment Failures (11:30 – 01:00)
- RCA techniques, FMEA, case studies
- Module 4: Workshop – Rotating Equipment Case Analysis (02:00 – 03:30)

Day 5: Facility Integrity, Risk and Environmental Compliance

- Module 1: Asset Integrity and Risk-Based Inspection (RBI) (07:30 – 09:30)
- Pressure vessels, piping, corrosion under insulation (CUI)
- Module 2: Environmental & Regulatory Compliance (09:45 – 11:15)
- Emissions, waste management, regulatory frameworks
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Module 3: Brownfield Modifications and Decommissioning (11:30 – 01:00)

- Lifecycle planning, upgrades, and abandonment
- Module 4: Final Workshop – Facility Management Framework (02:00 – 03:30)

Certification

Participants will receive a Certificate of Completion in Oil & Gas Facilities Engineering & Management, validating their advanced knowledge and capability in managing engineering, operations, and integrity of oil and gas production facilities.

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**