AMERICAN GLOBAL INSTITUTE
FOR PRIVATE TRAINING

External Training Course

Wellhead Mastery: Maintenance, Troubleshooting & Operations

From 30 Mar. 2026 To 03 Apr. 2026
From 27 Apr. 2026 To 01 May 2026
From 25 May 2026 To 29 May 2026

Ramada Suites By Wyndham KLCC, Kuala Lumpur, Malaysia

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From 30 Mar. 2026 To 03 Apr. 2026 Fees: 1900 KD
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Course Overview

This course provides participants with comprehensive knowledge and practical skills necessary for effective wellhead operations, troubleshooting, and maintenance. Combining theoretical knowledge, hands-on exercises, workshops, and case studies, the course emphasizes production optimization, operational safety, and adherence to international standards.

Course Objectives

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

- Troubleshoot operational problems related to wells, flow lines, and surface equipment.
- Identify well control factors, downhole devices, and operational risks.
- Monitor well productivity, pressure, and flow control systems.
- Understand wellhead construction, control systems, and surface equipment.
- Maintain wellhead and Christmas Tree efficiently.
- Implement preventive maintenance and inspection programs.
- Analyze production data for operational optimization.

Target Audience

Field Services Foremen.
Petroleum Engineers.
Drilling Engineers.
Oil Field Technical Staff.
Operations Foremen.
Production Engineers.
Completion Engineers.
Production Operators.

Training Methodology

Interactive lectures and technical presentations.
Hands-on practical exercises on equipment or mock-ups.
Workshops and group problem-solving exercises.
Case studies based on real operational challenges.
On-field monitoring and data collection exercises.
Mentoring sessions and feedback.
Practical troubleshooting exercises using actual operational data.

Organizational Impact

Improved reliability of wellhead and production operations.

Reduced downtime through effective troubleshooting.

Enhanced preventive maintenance and operational planning.

Stronger adherence to international safety standards.

Optimized production efficiency and operational costs.

Personal Impact

Enhanced technical knowledge in wellhead and production operations.

Practical skills in monitoring, troubleshooting, and maintenance.

Ability to analyze and optimize production performance.

Strengthened problem-solving and decision-making skills.

Confidence in performing inspections, diagnostics, and corrective actions.

Course Content & Outline

Day 1: Overview & Well Construction

- Introduction to the oil and gas industry: upstream, midstream, and downstream.
- Overview of well types and drilling objectives.
- Well construction principles and design considerations.
- Casing string types, installation, and integrity checks.
- Completion string selection and configuration.
- Workshop: Review of well construction plans and schematics.
- Group Exercise: Identifying potential operational issues during construction.
- Safety considerations during well construction.

Day 2: Wellhead Operations & Troubleshooting

- Wellhead components and functions.
- Initial actions based on field data collection.
- Analysis of operational parameters (pressure, flow, temperature).
- Performing first diagnostics and corrective actions.
- Production data collection, monitoring, and database management.
- Methods of surveillance and reporting.
- Case Study: Troubleshooting common wellhead issues.
- Practical Exercise: Field parameter evaluation and problem-solving.

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Day 3: Christmas Tree & ESD Systems

- Overview of the Christmas Tree: components and functions.
- ESD (Emergency Shutdown) system principles and operation.
- Types and functions of valves and chokes.
- Flow line pressure safety valves and operation.
- Maintenance planning: inspection, testing, and preventive programs.
- Hands-on Exercise: Valve and choke inspection and maintenance.
- Workshop: Operational drills and practical response to abnormal conditions.
- Troubleshooting abnormal flow and pressure situations.

Day 4: Production Systems & Performance Monitoring

- Production system components and interactions.
- Reservoir performance monitoring and analysis.
- Well performance monitoring: flow rate, pressure, and productivity.
- Surface performance systems and integration.
- Production rate optimization and pressure drop analysis.
- Wellhead and flow line operational checks.
- Practical Exercise: Monitoring well performance using collected data.
- Case Study: Production optimization through system integration.

Day 5: Well Testing, Production Optimization & Case Studies

- Well testing principles and procedures.
- Production operations and unit checks (GC equipment).
- Effects of well assembly on production rates.
- Backpressure vs production rate relationship.
- Operations according to international standards and procedures.
- Production optimization using check system analysis and data interpretation.
- Case Studies: Troubleshooting complex wellhead and production issues.
- Group Exercise: Develop a well maintenance and optimization plan.
- Review, feedback, and mentoring session.

Course Agenda:

(1st Day) Agenda

8.30	9.00	Opening Remarks (30 Min.).
9.00	11.30	DISCUSS COURSE OBJECTIVES: • Overview & Well Construction. • Wellhead Operations & Troubleshooting. • Christmas Tree & ESD Systems. • Production Systems & Performance Monitoring. • Well Testing, Production Optimization & Case Studies.
11.30	12.00	Coffee Break
12.00	14.00	Overview & Well Construction: • Introduction to the oil and gas industry: upstream, midstream, and downstream. • Overview of well types and drilling objectives. • Well construction principles and design considerations. • Casing string types, installation, and integrity checks. • Completion string selection and configuration. • Workshop: Review of well construction plans and schematics. • Group Exercise: Identifying potential operational issues during construction. • Safety considerations during well construction.
14.00	14.30	Questions and Discussion
14.30		Buffet Lunch

(2nd Day) Agenda

9.00	11.30	Wellhead Operations & Troubleshooting: • Wellhead components and functions. • Initial actions based on field data collection. • Analysis of operational parameters (pressure, flow, temperature). • Performing first diagnostics and corrective actions.
11.30	12.00	Coffee Break
12.00	14.00	Wellhead Operations & Troubleshooting: • Production data collection, monitoring, and database management. • Methods of surveillance and reporting. • Case Study: Troubleshooting common wellhead issues. • Practical Exercise: Field parameter evaluation and problem-solving.
14.00	14.30	Questions and Discussion
14.30		Buffet Lunch

(3rd Day) Agenda

9.00	11.30	Christmas Tree & ESD Systems: • Overview of the Christmas Tree: components and functions. • ESD (Emergency Shutdown) system principles and operation. • Types and functions of valves and chokes. • Flow line pressure safety valves and operation.
11.30	12.00	Coffee Break
12.00	14.00	Christmas Tree & ESD Systems: • Maintenance planning: inspection, testing, and preventive programs. • Hands-on Exercise: Valve and choke inspection and maintenance. • Workshop: Operational drills and practical response to abnormal conditions. • Troubleshooting abnormal flow and pressure situations.
14.00	14.30	Questions and Discussion
14.30		Buffet Lunch

(4th Day) Agenda

9.00	11.30	Production Systems & Performance Monitoring: • Production system components and interactions. • Reservoir performance monitoring and analysis. • Well performance monitoring: flow rate, pressure, and productivity. • Surface performance systems and integration.
11.30	12.00	Coffee Break
12.00	14.00	Production Systems & Performance Monitoring: • Production rate optimization and pressure drop analysis. • Wellhead and flow line operational checks. • Practical Exercise: Monitoring well performance using collected data. • Case Study: Production optimization through system integration.
14.00	14.30	Questions and Discussion
14.30		Buffet Lunch

(5th Day) Agenda

9.00	11.30	Well Testing, Production Optimization & Case Studies: • Well testing principles and procedures. • Production operations and unit checks (GC equipment). • Effects of well assembly on production rates. • Backpressure vs production rate relationship. • Operations according to international standards and procedures.
11.30	12.00	Coffee Break
12.00	14.00	Well Testing, Production Optimization & Case Studies: • Production optimization using check system analysis and data interpretation. • Case Studies: Troubleshooting complex wellhead and production issues. • Group Exercise: Develop a well maintenance and optimization plan. • Review, feedback, and mentoring session.
14.00	14.30	Questions and Discussion
14.30		Buffet Lunch