MERCURY

Advanced Refinery Plant Troubleshooting and Engineering Solutions Training Course

14 – 18 February 2027
Dubai (UAE)



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Ref: 15672_319999 **Date:** 14 – 18 February 2027 **Location:** Dubai (UAE) **Fees:** 4900 Euro

Introduction:

This Advanced Refinery Plant Troubleshooting and Engineering Solutions comprehensive program is designed for professionals seeking to deepen their expertise in addressing complex issues within refinery operations and implementing effective engineering solutions. Challenges such as process inefficiencies, equipment failures, and operational anomalies are common in a refinery's dynamic environment.

This course will equip participants with the advanced skills and knowledge to tackle these challenges head-on. Through theoretical knowledge and practical applications, participants will learn to diagnose intricate problems, apply advanced troubleshooting techniques, and devise strategic solutions to optimize plant performance.

The course covers advanced troubleshooting methodologies, process analysis, and engineering solutions tailored to refinery operations. Participants will engage in case studies and hands-on exercises that reflect real-world scenarios, ensuring they gain practical experience in resolving complex issues.

Participants will possess a robust understanding of advanced troubleshooting strategies and engineering principles that will enhance their ability to maintain and improve refinery operations. Join us in this course to advance your skills and contribute to the efficiency and effectiveness of refinery plant operations.

Targeted Groups:

- Refinery Process Engineers.
- Plant Maintenance Engineers.
- Process Control Specialists.
- Operations Managers.
- Technical Support Teams.
- Maintenance Supervisors.
- Refinery Safety Officers.
- Engineering Consultants.
- Plant Troubleshooting Teams.
- Production Managers.
- Reliability Engineers.
- Process Optimization Specialists.
- System Integration Engineers.
- Quality Assurance Engineers.
- Plant Operators.

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Course Objectives:

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

- Develop advanced troubleshooting skills for refinery processes.
- Learn techniques for diagnosing complex equipment failures.
- Apply process analysis methods to identify inefficiencies.
- Implement engineering solutions to enhance plant performance.
- Understand and apply root cause analysis in troubleshooting.
- Enhance skills in process control and optimization strategies.
- Improve the ability to evaluate and address performance metrics.
- Integrate safety and compliance measures into troubleshooting.
- Foster critical thinking and decision-making abilities.
- Gain practical experience through real-world case studies.
- Master techniques for system integration and improvement.
- Develop preventive maintenance strategies to reduce downtime.
- Refine technical communication and reporting skills.
- Address complex issues with a structured troubleshooting approach.
- Optimize refinery operations for increased efficiency and reliability.

Targeted Competencies:

- Advanced Troubleshooting Techniques.
- Process Analysis and Optimization.
- Root Cause Analysis.
- Equipment Failure Diagnosis.
- Process Control Strategies.
- Engineering Problem Solving.
- System Integration and Improvement.
- Safety and Compliance Measures.
- Performance Metrics Evaluation.
- Troubleshooting Methodologies.
- Critical Thinking and Decision Making.
- Technical Communication and Reporting.
- Preventive Maintenance Strategies.
- Process Efficiency Enhancement.

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Course Content:

Unit 1: Advanced Troubleshooting Techniques:

- Overview of advanced troubleshooting methodologies.
- Steps for diagnosing complex process and equipment issues.
- Utilization of diagnostic tools and technologies.
- Procedures for analyzing and interpreting diagnostic data.
- Techniques for isolating and identifying root causes of problems.
- Strategies for troubleshooting in high-pressure and emergencies.
- Hands-on exercises with diagnostic equipment and software.
- Case studies highlighting real-world troubleshooting challenges.
- Development of systematic troubleshooting approaches and checklists.
- Methods for documenting and reporting troubleshooting results.

Unit 2: Process Analysis and Optimization:

- Introduction to advanced process analysis techniques.
- Methods for assessing and measuring process performance.
- Identification of process inefficiencies and bottlenecks.
- Use of process simulation and modeling tools for optimization.
- Techniques for improving process reliability and stability.
- Best practices for implementing process improvement initiatives.
- Case studies on successful process optimization projects.
- Hands-on exercises in process analysis and improvement strategies.
- Methods for evaluating the impact of process changes.
- Development of action plans for continuous process enhancement.

Unit 3: Equipment Failure Diagnosis:

- Common causes and types of equipment failures in refinery operations.
- Diagnostic techniques for various equipment and systems.
- Procedures for conducting root cause analysis of equipment failures.
- Strategies for preventing equipment failures and minimizing downtime.
- Analysis of failure modes, effects, and criticality.
- Case studies on major equipment failures and successful recovery efforts.
- Practical sessions on inspecting and diagnosing equipment issues.
- Development of preventive and predictive maintenance plans.
- Techniques for improving equipment reliability and performance.
- Documentation and reporting of equipment failure analysis.

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Unit 4: Engineering Solutions and Process Control:

- Fundamentals of engineering solutions for process control.
- Design and implementation of advanced control strategies and systems.
- Analysis of control system performance and effectiveness.
- Techniques for integrating new solutions with existing processes.
- Case studies on engineering solutions and their impact on refinery operations.
- Hands-on exercises on designing, testing, and optimizing control systems.
- Methods for evaluating and validating engineering solutions.
- Development of strategies for continuous improvement in process control.
- Understanding and applying control system algorithms and technologies.
- Methods for troubleshooting control system issues and failures.

Unit 5: Safety, Compliance, and Performance Metrics:

- Importance of safety and regulatory compliance in refinery operations.
- Techniques for ensuring adherence to safety standards and regulations.
- Methods for monitoring and evaluating operational performance metrics.
- Integration of safety practices into troubleshooting and engineering solutions.
- Case studies on safety incidents, compliance challenges, and resolutions.
- Practical sessions on developing and implementing safety protocols.
- Techniques for generating and analyzing performance reports.
- Best practices for maintaining compliance and operational excellence.
- Development of safety and performance improvement plans.
- Strategies for continuous monitoring and assessment of safety and performance.