

PROCESS PLANT OPTIMIZATION TECHNOLOGY & CONTINUAL IMPROVEMENT

“Boosting Efficiency, Reliability, and Performance in Plant Operations through Modern Optimization Tools”

Schedule

Date	Venue	Fees (Face-to-Face)
27 - 28 Apr 2026	Doha, Qatar	USD 1995 per delegate

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

Introduction

Industrial process plants are under increasing pressure to operate more efficiently, reduce downtime, and improve reliability—all while meeting safety and environmental standards. Optimization technology, paired with continual improvement strategies, enables operators and engineers to unlock hidden value, reduce waste, and achieve performance excellence.

This course provides practical techniques and tools for optimizing process operations, equipment performance, and energy efficiency. It covers key principles of plant diagnostics, root cause analysis, data interpretation, and continuous improvement cycles. Participants will gain hands-on skills to assess plant performance, identify bottlenecks, and implement sustainable improvements.

Objectives

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

- Analyze plant operations and identify performance improvement opportunities
- Apply process optimization tools to reduce losses and energy consumption
- Implement root cause analysis and reliability-centered improvement methods
- Monitor key performance indicators (KPIs) and apply data-driven decision-making
- Drive continuous improvement initiatives within the process plant environment

Why Attend

- Enhance your ability to improve process uptime, yield, and efficiency
- Learn to use data, diagnostics, and benchmarking to improve plant performance
- Develop a culture of operational excellence through continual improvement
- Support plant safety, quality, and sustainability goals through optimization
- Access proven tools to identify root causes of inefficiencies and failures

Target Audience

This program is designed for:

- Process engineers and operations supervisors
- Plant managers and technical services professionals
- Maintenance and reliability engineers
- Continuous improvement and quality personnel
- Anyone involved in process performance and plant optimization

Individual Benefits

Key competencies that will be developed include:

- Process analysis and optimization methodology
- Use of diagnostic tools and plant data interpretation
- Application of PDCA and other CI frameworks
- Problem-solving through root cause analysis (RCA)
- Improvement planning and implementation skills

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved operational efficiency and resource utilization
- Reduction in unplanned downtime and process variability
- Enhanced data collection, analysis, and action planning
- Stronger cross-functional collaboration in performance improvement
- More proactive and sustainable optimization culture

Instructional Methodology

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

- Strategy Briefings - Overview of process optimization frameworks and methodologies
- Case Studies - Performance improvement success stories from real-world plants
- Workshops - Process bottleneck analysis, RCA mapping, and KPI tracking
- Peer Exchange - Group discussions on plant-specific challenges and innovations
- Tools - Optimization checklists, improvement templates, and diagnostic scorecards

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: Fundamentals of Process Optimization

- Module 1: Understanding Process Efficiency and Losses (07:30 - 09:30) • Types of operational losses: quality, yield, time, energy
- Module 2: Process Mapping and Bottleneck Identification (09:45 - 11:15) • Value stream mapping and constraint analysis
- Module 3: Performance Monitoring and KPI Selection (11:30 - 01:00) • OEE, MTBF, cycle time, and energy use metrics
- Module 4: Workshop - Plant Optimization Diagnostic (02:00 - 03:30) • Analyze a sample plant and identify improvement areas

Day 2: Continuous Improvement and Advanced Tools

- Module 1: Root Cause Analysis and Problem Solving (07:30 - 09:30) • Fishbone, 5 Whys, Pareto, and fault tree techniques
- Module 2: Reliability-Centered Improvement (09:45 - 11:15) • Failure modes and performance risk mitigation
- Module 3: Continuous Improvement Frameworks (11:30 - 01:00) • PDCA, Kaizen, Lean tools, and Six Sigma synergy
- Module 4: Final Workshop - Create an Optimization Action Plan (02:00 - 03:30) • Develop a practical improvement roadmap for your plant

Certification

Participants will receive a Certificate of Completion in Process Plant Optimization Technology & Continual Improvement, validating their ability to identify, plan, and implement data-driven performance improvements across plant operations.

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