ISTANBUL – TURKEY

11-15 May 2026

Process Plant Optimization, Revamping and Debottlenecking

Course Overview

The optimization of process plants requires effective management of maintenance operations and equipment, along with plant reliability and durability.

The vital aspects of process plant optimization are related to system energy management and the reduction of energy consumption. Many industrial processes and systems currently offer significant potentials for savings. However, bringing significant process changes such as modern controls and newer technologies can also enhance the opportunities for plant optimization. This course will discuss the importance of monitoring and adjusting process plant operations. You will learn to do this in a way that sustains optimum levels of efficiency. This is done while maintaining safe and reliable operational procedures.

The main aim of a revamp is to improve basic parameters like volume or processing efficiency. Revamping and debottlenecking require flexibility in planning and proficiency in the right engineering gear. Therefore, to optimize and maintain the fundamental performance of a unit, this program is important to take you beyond a surface level of study.

This training course will provide you with a comprehensive view of the process of how to optimize offsite plant operations including design, storage facilities, and inventory

management, understand utility management, and expand your knowledge on optimization, revamping, and debottlenecking process plants.

Course Objectives

Following the completion of this Process Plant Optimization, Revamping and Debottlenecking training program effectively, delegates will be able to:

- Understand plant optimization and energy conservation in detail
- Describe and practice the managerial tools needed to effectively optimize plant operations
- Evaluate the concept of capacity creep and discuss the methodology of the cost-effective debottlenecking strategies
- Implement systematic methods of optimizing plant reliability including root cause failure analysis, logic diagrams, fault trees, etc.
- Identify the role and importance of management and enterprise information systems in plant optimization
- Acquire knowledge on risk management in process plant optimization
- Describe utility management and rehabilitation in revamping and debottlenecking
- Assess the maintenance, energy, utilities, environmental, and safety parameters in revamping and debottlenecking
- Analyze economic, planning, and other project management issues

Who Should Attend?

This Process Plant Optimization, Revamping and Debottlenecking training program would be suitable for:

- Process plant technical professionals
- Engineers, technicians, and operators
- Supervisors and maintenance personnel
- Project engineers

- Engineering and technical personnel responsible for improving process and petrochemical plant, and refinery profitability
- Those who are involved in planning, managing, and ensuring energy efficiency

Course Outline

DAY 1

Module 1: Overview of Process Plant Operation

- Overview of Optimization Technologies for Process Plants
- Elements of Process Plant Optimization Procedure
- Constraints in Optimization:
  - Production
  - Operation
  - Economy
  - Environment
- Optimization Approaches
- Mathematical Models and Physical Models
- Correlation between Process Optimization and Process Control
- Workshop: Examples and Solutions

DAY 2

Module 2: Process Plant Optimization Basics

- Process Plant Optimization
- Process Control Basics
- Elements of Process Plant Optimization
- Components to Optimize Industrial Processes
- Mathematical Model of Process
- Process Variables

- Simulation Technology to Plant and Control
- The Basics of Heat Integration

Module 3: Energy Management for Businesses & The Environment

- Industrial Energy Management
- Energy Efficiency for Businesses and the Environment
- Energy Use and in Process Industry
- Energy Management Standard: Details
- Energy Management Standard: Features
- Obstacles for Energy Management Programs

DAY 3

Module 4: Energy Conservation

- World Standards and Benchmarking Guidelines
- Useful Practices in Process Plant Energy Management
- Energy Conservation Check List for Industrial Plants
- Energy Conservation Opportunities
- Energy Audit
- Energy Audit Types
- Benchmarking Energy Intensity and Usage
- New Energy Efficient Technologies
- Technical Evaluation of Potential Opportunities
- Economic Evaluation of Renewable Energy

DAY 4

Module 5: Plant Optimization Activities

- Implications of Plant Optimization Activities
- Technological Modifications to the Plant

- Technology Licenses
- Impact on Human Resources
- Good Safety - Good Business
- Safety Costs: Costs of Injuries

DAY 5

Module 6: Revamping and Debottlenecking Strategies

- Revamping Strategies
- Production Capacity Enhancement
- Maintenance, Energy, Utilities, Environmental and Safety Parameters
- Economic, Planning, and Project Management Issues
- Case Studies:
    - Optimizing a Polypropylene Plant
    - Debottlenecking Ethylene & Propylene Plant
- Revamping an Oil Refinery Plant

Training Course Prices:

Number of Participants	Course Price
1 participant	KWD 1550.000
2 participants	KWD 1500.000
3 participants	KWD 1450.000
4 participants	KWD 1400.000
5 participants	KWD 1350.000
6 and above participants	KWD 1300.000
