

**Training  
Course**

**Refinery Process Plant  
Performance, Efficiency, and  
Yield Optimization**

## Course Plan

### Introduction

This advanced training program is designed to enhance participants' understanding of refinery process plant operations and performance optimization. It focuses on improving plant efficiency, maximizing yield, and reducing energy consumption while ensuring operational reliability and safety. Participants will gain in-depth knowledge of key refinery processes, performance indicators, energy integration techniques, and data-driven optimization tools to achieve sustainable operational excellence.

### Course Objectives:

- ✓ Understand the main refinery process units and their performance drivers.
- ✓ Identify key performance indicators (KPIs) for refinery optimization.
- ✓ Analyze and interpret process data for efficiency improvement.
- ✓ Apply modern tools and techniques to optimize energy use and yield.
- ✓ Develop and implement performance improvement strategies.
- ✓ Troubleshoot process inefficiencies and propose corrective actions.
- ✓ Integrate advanced process control and digital solutions for continuous optimization.

## Who Should Attend?

- Process Engineers and Refinery Engineers
- Operations Supervisors and Managers
- Production and Maintenance Engineers
- Energy and Optimization Specialists
- Technical Support and R&D Staff
- Professionals involved in refinery performance improvement initiatives

## Training Methods:

- ✓ Online Video material.
- ✓ Presentation.
- ✓ Live Interactive sessions.
- ✓ Course presenter will make extensive use of all tools that will be needed for the virtual environment.
- ✓ Questions & Answers

## Course Outline:

### Day One

- Overview of Refinery Operations and Process Flow
- Fundamentals of Refining Chemistry and Product Yields
- Major Refinery Units and Their Functions
- Crude Oil Assay and Its Impact on Refinery Performance
- Key Performance Indicators (KPIs) in Refinery Operations

### Day Two

- Process Simulation and Modeling Techniques
- Energy Efficiency and Heat Integration Strategies
- Steam and Power Optimization in Refineries
- Advanced Process Control (APC) and Real-Time Optimization (RTO)
- Catalytic Cracking and Reforming Optimization

### Day Three

- Distillation Column Efficiency Improvement
- Hydrotreating and Hydrocracking Optimization
- Monitoring and Improving Unit Yields
- Troubleshooting Process Bottlenecks
- Energy and Material Balance Analysis

### Day Four

- Reliability and Maintenance Strategies for Performance Improvement
- Digital Transformation and AI Applications in Refineries
- Process Data Analytics for Continuous Improvement
- Debottlenecking Techniques and Case Studies
- Emission Reduction and Environmental Performance

### Day Five

- Product Quality Optimization and Blending Control
- Cost Reduction and Profitability Enhancement
- Benchmarking and Performance Gap Analysis
- Case Studies of Refinery Optimization Success Stories
- Developing and Implementing an Optimization Action Plan

## Training Details

Course Duration	5 Days
Pre-Schedule	3 – 7 Feb 2026
Venue	Barcelona – Sapain – Le Merdian Hotel
Training Fees Per Person	KWD 1750 ( One Thousand Seven Hundred Fifty \
Course Fees Include	<ul style="list-style-type: none"> <li>✓ Tuition documentation</li> <li>✓ Curriculum and Training Handout</li> <li>✓ Five star Lunch</li> <li>✓ Completion Certificates</li> <li>✓ Lunch Included</li> </ul>