

Training Title

REFINERY OPERATIONS

Training Duration

5 days

Training Venue and Dates

Ref RE045	Refinery Operations	5	02 - 06 Sep. 2024	\$5,500	Doha, Qatar
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In any of the 4 or 5 star hotel. Exact venue will be informed later.

Training Fees

- \$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch.

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

TRAINING OVERVIEW

TRAINING DESCRIPTION

This Petroleum Refining training course is a combination of two modules specifically designed to run consecutively. Attendees are given a detailed overview of all major refining processes and are familiarized to the most commonly encountered production planning and scheduling issues in petroleum refineries, how to identify them and resolve them.

Additionally, this training course will present a detailed outline of refining process yields optimization, from the crude oil feed to the finished products. Issues of operations scheduling for petroleum refining are discussed in depth and enhanced with planning and scheduling and yield optimization examples.

TRAINING OBJECTIVES:

By the end of the program, participants will be able to:

- Gain an appreciation of production planning and scheduling tools that will be useful for planning of crude and product deliveries
- Differentiate and appreciate the similarities and differences between planning and scheduling
- Understand the principles of scheduling optimization and promote efficient refining operations, and yield optimization

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- Learn the skills to crude selection and optimization that result in improved profitability
- Develop the skills necessary to apply blending techniques using excel
- To familiarize and understand the various refinery types and appreciate how refining complexity impacts refining optimization and refining margins
- Comprehend the importance quality giveaways and learn how use practical excel spreadsheets for blending calculations to reduce quality giveaways
- Use hands on software that allows professionals in the industry to choose different crude diets to optimize refinery utilization efficiency and profitability
- Act as a primer into the industry of Petroleum Refining and familiarize industry professionals with all processes associated with the processing of petroleum into finished products
- Equip new engineers into the industry, with the basic tools for understanding the complex nature of Refining and its operations.

TRAINING METHODOLOGY

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody find the right answers. The delegates will also be encouraged to raise their own questions and to share in the development of the right answers using their own analysis and experiences.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work& Practical Exercises
- 20% Videos& General Discussions

WHO SHOULD ATTEND?

- Refining Professionals working in the industry either as refining technologists or in refining operations and engineers
- All Professionals involved in Production, Planning and Scheduling
- Process Engineers and Technologists engaged in planning and scheduling activities and who are required to understand and discuss issues related to their industry
- Operations Personnel including Shift Supervisors
- Marketers and Refinery Planners
- Blending Professionals
- Refining Technologists
- Other Engineers who would like a further understanding of the complex refining processes.

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COURSE CONTENTS

Day 1 Application of Planning and Scheduling

- Overview of Planning and Scheduling in Oil Refineries
- Refinery Complexity
- Refinery Configuration
- Integrated Refineries
- Choice of Crude
- Crude Oil Scheduling
- Capacity Utilization of Crudes & Operational Efficiency
- Workshop - Cut-point Optimization
- Improving Product Movements and Releasing Tankages
- Crude Assay
- Intermediate Feed Characteristics
- Yields and Properties
- Different Process Units
- Storage Tanks
- Custody Transfer / Measurements
- Class Exercises: Using Excel - Yield Optimization

DAY 2 Product Blending Rules

- Product Specifications
- New Trends in Fuel Production
- Environmental Issues
- Crude Oil Pricing Regimes
- Product Netback
- Refinery Flow Sheets
- Refinery Flow-sheets
- Simplified Material Balance
- Product Inventory Control
- Product Quality Control
- Fixed Composition Blend
- Capacity Control / Constraints
- Availability of Feedstock / Control

DAY 3 Refinery Planning and Scheduling

- Petroleum Product Movement and Product Exchange
- Marginal Depot Supply and Movements
- Crude Selection Strategies

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- Linear Programming and Fundamentals of Supply Chain Management for Refining
- Refinery Planning and Scheduling
- Discussion and Summary
- Module 2: Refinery Process Yield Optimisation
- Crude Oil Yields Refinery Technology
- Introduction to Crude Oil Origins & Characteristics
- Crude Oil Assay and Properties
- Crude Oil Products
- LPG
- Gasoline
- Kerosene / Jet Fuel
- AGO / Diesel Fuel Oil
- Petrochemical Feedstocks
- Overall Refinery Flow: Interrelationship of Processes

DAY 4 Petroleum Refinery Processes

- Crude Processing
- Desalting
- Atmospheric Distillation
- Vacuum Distillation
- Heavy Oils Processing / Bottom of the Barrel Upgrading
- Coking and Thermal Processes
- Delayed Coking
- Fluid Coking
- Flexi coking
- Vis breaking
- Intermediate Feed Characteristics
- Process for Motor Fuel Production
- Fluid Catalytic Cracking
- Hydrocracking
- Cat Cracking
- Isomerization
- Alkylation
- Hydrotreating
- Catalytic Reforming
- Product Specifications

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DAY 5 Supporting Operations

- Blending for Product Specifications
- Hydrogen Production

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- Storage Tanks
- Refinery Gas Plants
- Acid Gas Treating
- Sulfur Recovery Plants
- Refinery Economics
- Residue Reduction
- Asphalt and Residual Fuel
- Refinery Complexity and Netback
- Economic Evaluation
- Cost Estimation
- Group Discussions
- Program Evaluation & Summary

NOTE:

Pre-& Post Tests will be conducted

Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.



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