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Production Planning & Scheduling Petroleum Refineries MBA

18 November - 6 Decem

Tbilisi (Georgia)

Production Planning & Scheduling Petroleum Refineries MBA

course code: E6059 From: 18 November - 6 December 2024 Venue: Tbilisi (Georgia) - course Fees: 6750 Euro

Introduction

This programme is specifically designed to identify and resolve issues of production planning and scheduling in petroleum refineries that are most commonly encountered by refinery personnel working in this area. Issues of operations scheduling for petroleum refining are discussed in depth. It will also be enhanced with planning and scheduling examples and will provide relevant background information of the subject.

Additionally the programme will present a detailed overview of refining process yields, from the crude oil feed to the finished products. Major refining processes are presented and discussed, including feedstock, feedstock preparation, operating conditions, catalysts, yields, product properties, and economics.

The program is oriented toward the practical aspects of refinery operations as well as the terminology and economics of refining.

Objectives

The key objectives of this comprehensive course are as follows:

- Gain an appreciation of modern planning and scheduling tools that will be useful for planning of crude and product deliveries in their facilities
- Assist in improved operations, optimization, upgrading and modification of existing facilities
- Will result in improved profitability and help in continuous modernization of facilities
- Act as a primer into the industry of Petroleum Refining to maximise process fluid yields
- 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

Petroleum Refining-Production Planning, Scheduling and Yield Optimization is a hands on, stimulating learning experience. The programme will be highly interactive, with opportunities to advance your opinions and ideas. Participation is encouraged in a supportive environment.

To ensure the concepts introduced during the programme are understood, they will be reinforced through a mix of learning methods, including lecture style presentation, open discussion, case studies, and group work.

Attendees will have the opportunity to develop personal competencies and build up expert knowledge of crude oil production planning, scheduling and yield optimization in a range of equipment.

SEMINAR OUTLINE

Application of Planning and Scheduling

- Overview of planning and scheduling in oil refineries
- Refinery Configuration:
- Hydro skimming Refinery
- Refineries with Secondary Conversion Process
- Integrated Refineries
- Existing & New Refineries
- Choice of Crude
- Crude oil scheduling
- Choice of Processes
- Capacity utilization of Crudes
- Severity of Process Operations
- Cut-points Optimization
- Facing Upset Situations
- Tankage Requirement

Improving Product Movements and Releasing Tankages

- Basic Information Required
- Crude Assay
- Intermediate Feed Characteristics
- Yields and Properties
- Different Process Units
- Utilities

Product Blending Rules

- Product Specifications
- New Trends in fuel production
- Environmental Issues
- Crude Cost
- Product Netback

Formulation of Problem

- Refinery Flow-sheets
- Simplified Material Balance
- General Formulation
- Demand Equations
- Product Inventory Control
- Product Quality Control
- Fixed Composition Blend

- Capacity Control/ Constraints
- Availability of Feedstock/ Control

Application to a Refinery Worksheet

- Petroleum Product Movement and Product Exchange
- Marginal Depot Supply and movements
- Commonly Used Methods & Recent Developments
- Mathematical Approach to Solution
- Linear Programming
- Graphic Method
- Vendors Software
- Discussion and Summary

Refinery Process Yields Optimisation

Crude Oil Yields Refinery Technology

- Introduction
- Crude Oil Origins & Characteristics
- Crude oil Assay and properties
- Crude oil products
- Product specifications
- Gasoline
- Kerosene/ Jet Fuel
- Fuel Oil/ Diesel Fuels
- Petrochemical Feedstocks
- Refineries Complexity
- Overall refinery flow: Interrelationship of processes

Petroleum Refinery Processes

- Crude Processing
- Desalting
- Atmospheric distillation
- Vacuum distillation
- Heavy Oils Processing – Cocking and Thermal Processes
- Delayed Coking
- Fluid Coking
- Flexicoking
- Visbreaking
- Case study – example

Process for Motor Fuel Production

- Fluid catalytic cracking
- Hydrocracking
- Cat Cracking
- Isomerization
- Alkylation
- Hydrotreating
- Catalytic Reforming
- Case study – example

Supporting Operations

- Blending for Product Specifications
- Hydrogen production
- Refinery Gas Plants
- Acid Gas Treating
- Sulfur Recovery Plants
- Case study – example

Refinery Economics

- Residue Reduction
- Asphalt and Residual Fuel
- Cost Estimation
- Economic Evaluation
- Case Studies
- Group Discussions
- Program Evaluation & Summary