

### Petroleum Refining-Production Planning, Scheduling & Yield Optimization





# Petroleum Refining-Production Planning, Scheduling & Yield Optimization



#### **Course Objective**

- ➤ Gain an appreciation of 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
- ➤ Learn the skills to crude selection and optimization that result in improved profitability
- ➤ Develop the skills necessary to apply blending techniques using excel

#### **Target Audience**

- ➤ 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
- ➤ Accountants, marketers and other professions who would like understand the complexities and terminology of Production Planning & Scheduling in Petroleum Refineries
- Anyone who wishes to update themselves on the methods used in this important field and learn how to implement error free methods for the benefit of their organizations





#### **Course Outline**

- > Day One: 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

## ➤ Day Two: 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 Three: Product Blending Rules

- > Product Specifications
- ➤ New Trends in fuel production
- > Environmental Issues
- > Crude oil pricing regimes
- ➤ Product Netback
- ➤ Class Workshop: Blending exercises



- > Day Four: 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
- ➤ Case study: Gasoline Blending and Its Impact on Operations
- > Day Five: Refinery Planning and Scheduling
- ➤ Petroleum Product Movement and Product Exchange
- ➤ Marginal Depot Supply and movements
- > Crude Selection Strategies
- ➤ Linear Programming and Fundamentals of Supply Chain Management for Refining
- Refinery Planning and Scheduling
- ➤ Discussion and Summary



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#### Price (USD)

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