Petrogenium. Academy

Performance Improvement

Refinery Economics

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The **Petrogenium**. Refinery Economics course will provide insight into many aspects of operating the modern refinery as a business, including technical information on refining processes, crude oils and processing options, the place of the refinery in the value chain, refinery cost structure and management, optimization and profit margin, energy and oil loss reduction, management tools and techniques used for economic evaluations in refineries and future trends.

Participants

Participants may include: all refinery technical personnel; operations' process engineers and process managers; technical services engineers and managers; refinery planners; newly-hired refinery personnel and current semi-technical personnel who require introductory training to acquire the broader perspective; nonrefinery professionals in the Oil & Gas industry or related sectors, such as consultants, contractors, suppliers and other interrelated companies interested in the oil refining business; employees of private equity firms and other investors interested in the refinery business; environmental professionals, insurance representatives, government officials, energy industry journalists & reporters and other professionals who desire a better understanding.

Learning Objectives

State the role of the main refining processes, operating characteristics, crude choice, processing options and desired products, crude and products quality parameters, refinery economics and planning; describe the place of the refinery in the value chain from ‘well to wheels’, including petrochemicals; methodology of optimization & product improvement; recognize the need for performance monitoring, Quality Assurance; apply analytical tools to refinery management; explain the challenges (including environmental), opportunities and future trends in the refining industry; understand and use the crude oil refining terminology.

This course includes presentations, short videos, exercises, interactive sessions (participants can propose relevant topics upfront to discuss in class) and an (optional) examination with certification.

Programme

DAY 1

- Safety & Introduction
  - Welcome, Safety & In House arrangements
  - Introduction of Participants
  - Program
  - Course Objectives
- Introduction
  - Global energy demand
  - Global crude oil and products demand
  - Crude Oil reserves
  - Refinery position in the value chain
- Crude Oil and Products
  - Crude oil origin, types & movements
  - Crude oil products
  - Crude oil product specifications
  - Crude oil pricing
  - Crude oil product pricing
- The Refinery
  - Refinery segments
  - Simple Refinery
  - Semi-complex refinery
  - Complex refinery
  - Main refinery units
  - The role of catalysts

Programme

DAY 2

- The Refinery (Continued)
  - Utilities
  - Refinery fuel
  - Refinery slops
  - Blending
  - Cost of petroleum processing plants
  - Refinery Lay-Out
- Refinery Economics
  - Refinery Margin
  - Yield & Expense Statement
  - Linear Programmig model
  - Crude Oil selection
  - Crude oil WC, Exposure, Natural Length
- Refinery Planning
  - Long-term planning
  - Short-term planning
  - Scheduling
  - Appraisal
- Environmental Reguations
  - Restrictions & opportunities
  - IMO2020
- Hydrocarbon mass Balance & Loss
  - Hydrocarbon mass balance
  - Hydrocarbon loss
  - Ocean loss

Programme

DAY 3

- Maintenance & Turnarounds
  - Maintenance & Reliability
  - Turnarounds
- Oil-Chemicals Interface
  - Petrochemicals
  - Products exchange
- Refinery Process Control
  - Drawings
  - DCS
  - APC
- Performance Monitoring
  - Key Performance Indicators
  - Review meetings
  - Benchmarking
- Quality & Assurance
  - Management System
  - Auditing
- Trends
  - Future of fossil fuels
  - Future of refineries
- Miscellaneous
  - Participant topics
  - Further reading
  - Video inventory
- Questions & Answers
- Examination & Certification
- Feedback