PARTNERS IN KNOWLEDGE UK LTD
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Skills & Knowledge in Petroleum Refinery Operations

PIK-0426 DZ-A-2

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Place	: Algiers	**Venue**	: Holiday Inn (02 Rte de Ouled Fayet, Chéraga 16002, Algiers) - TBC		
Start Date	: 06-04-2026	**End Date**	: 17-04-2026	**PPP**	: £4350

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If you can't train them, you can't blame them!

Short Description:

Petroleum refinery operations encompass a variety of processes that transform crude oil into valuable products, including fuels, lubricants, and petrochemicals. The refining process involves critical operations such as distillation, cracking, treating, and blending, all aimed at producing high-quality end products. Each step is essential to ensure that the final products meet stringent industry standards and consumer demands. This training program is designed to provide comprehensive instruction on the complexities of refining operations. It emphasizes key areas such as planning, scheduling, and yield optimisation, which are crucial for effective refinery management. Participants will gain a deep understanding of how each process contributes to the overall efficiency of the refinery. By equipping professionals with the necessary skills and knowledge, this program aims to enhance refinery efficiency, minimise quality giveaways, and optimize production yields. The training prepares individuals to tackle the challenges of modern refining operations, ensuring they can contribute to the success and sustainability of their facilities.

Course Overview:

COURSE OBJECTIVES

At the end of this program, participants will be able to:

- Explore production planning and scheduling tools for crude and product deliveries.
- Apply scheduling optimisation principles to ensure efficient refinery operations.
- Optimise crude selection to enhance overall profitability.
- Develop blending techniques using Excel to improve product quality.
- Minimise quality giveaways using practical Excel spreadsheets.
- Implement strategies to optimize refinery efficiency.
- Utilise data analysis to support decision-making in refinery operations.

TARGET AUDIENCE

- Refining professionals.
- Technologists in the refining industry.
- Operations engineers.
- Production planners and schedulers.
- Process engineers engaged in refinery activities.
- Operations personnel, including shift supervisors.
- Marketers and blending professionals.

Program Outline:

DAY 1: Refinery Configuration & Planning

1. Gain insights into hydro skimming refinery operations.

2. Investigate refineries employing secondary conversion techniques.
3. Examine integrated refinery systems.
4. Review both current and prospective refinery configurations.
5. Analyse crude oil selection and scheduling for optimal efficiency.

DAY 2: Product Movements & Tankage Management

1. Collect essential data for planning product movement.
2. Evaluate crude assay and characteristics of intermediate feeds.
3. Oversee yields and properties across various processing units.
4. Enhance product blending while considering specifications and environmental concerns.
5. Assess utilities to optimise product movement and tankage management.

DAY 3: Problem Formulation & Solution Strategies

1. Comprehend refinery flow sheets and material balance.
2. Develop problem statements and demand equations for optimisation tasks.
3. Implement strategies for product inventory and quality management.
4. Investigate capacity control and availability of feedstock.
5. Utilise mathematical techniques such as linear programming and graphical methods.

DAY 4: Crude Oil Yields and Refinery Technologies

1. Learn about the sources, assays, and attributes of crude oil.
2. Analyse crude oil products and their specifications.
3. Investigate refinery complexity and the interconnections of processes.
4. Review the production of gasoline, kerosene, jet fuel, and diesel.
5. Evaluate refinery economics and petrochemical feedstocks to optimize yields.

DAY 5: Petroleum Refinery Operations

1. Provide an overview of crude processing and desalting techniques.
2. Understand both atmospheric and vacuum distillation methods.
3. Analyse heavy oil processing techniques such as coking and thermal processes.
4. Explore delayed coking, fluid-coking, flex-coking, and Vis-breaking techniques.
5. Assess how refining processes influence product yields and quality.

DAY 6: Process for Motor Fuel Production

1. Examine fluid catalytic cracking, hydrocracking, and catalytic cracking.
2. Understand isomerization, alkylation, and hydrotreating for motor fuels.
3. Evaluate catalytic reforming processes for motor fuel production.
4. Manage blending to meet product specifications and hydrogen production needs.
5. Assess refinery gas plants, acid gas treatment, and sulphur recovery operations.

DAY 7: Refinery Economics & Optimisation

1. Create strategies for residue reduction to enhance yield and profitability.
2. Process asphalt and residual fuels to produce value-added products.
3. Learn methods for cost estimation and economic analysis.
4. Analyse economic factors that affect refinery operations.
5. Explore strategies for optimizing refinery performance.

DAY 8: Supporting Operations & Environmental Considerations

1. Implement blending techniques to ensure environmental compliance and product quality.
2. Understand hydrogen production methods and their environmental effects.
3. Manage refinery gas plants to minimize emissions.
4. Apply acid gas treatment methods for sulphur removal and protection.
5. Evaluate sulphur recovery facilities for regulatory compliance and sustainability.

DAY 9: Recent Developments & Future Trends

1. Investigate new technologies in refinery configuration and planning.
2. Learn about innovations in product movement and tankage management.
3. Discover progress in problem formulation and solution methodologies.
4. Stay informed on trends related to crude oil yields and refinery technologies.
5. Understand future directions for petroleum refining processes and motor fuel production.

DAY 10: Future Technologies in Refining & Sustainability

1. Explore contemporary advancements in refining technologies and automation.
2. Analyse the impact of digitalisation and AI on refining operations optimisation.
3. Understand sustainable refining practices, including carbon capture and integration of renewable energy.
4. Assess innovations aimed at reducing emissions and enhancing energy efficiency in refineries.
5. Discuss the future of refining in light of the global energy transition and sustainability objectives.