

€ TRAINING

Refinery Process Yields Optimization





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Introduction:

Optimizing industrial processes is key to improving efficiency and profitability in the energy sector. Refinery process yields optimization specifically focuses on enhancing refining operations to maximize valuable product output while minimizing waste. This training program focuses on enhancing the efficiency and productivity of refinery processes to maximize product yields and profitability. It equips participants with the skills and knowledge necessary to identify, analyze, and implement optimization opportunities in refinery operations.

Program Objectives:

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

- Identify the complex nature of Refining and its operations.
- Explore the drivers of the Petroleum Refining industry to maximize process fluid yields.
- Appreciate the purpose and subtleties of all processes associated with the processing of petroleum into finished products.
- Apply the learning to aid refinery scheduling and optimization.
- Appreciate the implications of different feedstocks on product quality and product range.

Targeted Audience:

- Process Engineers.
- Production Managers.
- Plant Engineers.
- Yield Optimization Professionals.
- Quality Control Managers.
- Technical Staff.

Program Outlines:

Unit 1:

Crude Oil Yields Refinery Technology:

- Understanding the origins and characteristics of crude oil.
- Conducting crude oil assay and analyzing properties.
- Reviewing crude oil products and their specifications.
- Examining key products: Gasoline, Kerosene/Jet Fuel, Diesel, and Fuel Oil.
- Identifying petrochemical feedstocks.
- Understanding refinery complexity and the interrelationship of processes.

Unit 2:

Petroleum Refinery Processes:

- Overview of crude processing and desalting techniques.
- Atmospheric and vacuum distillation processes.
- Understanding heavy oils processing: Coking and thermal processes.
- Detailed exploration of Delayed Coking, Fluid Coking, Flexicoking, and Visbreaking.

Unit 3:

Process for Motor Fuel Production:

- Fluid catalytic cracking and hydrocracking techniques.
- Cat cracking and isomerization processes.
- Alkylation and hydrotreating methods.
- Catalytic reforming and its role in motor fuel production.

Unit 4:

Supporting Operations:

- Blending for product specifications and quality control.
- Hydrogen production and its importance in refining.
- Refinery gas plants and their operations.
- Acid gas treating and sulfur recovery techniques.

Unit 5:

Refinery Economics:

- Residue reduction and its impact on refinery operations.
- Understanding asphalt and residual fuel production.
- Methods for cost estimation and economic evaluation.