

# € TRAINING

Refinery Process Yields Optimisation





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## Introduction:

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:

- Understand the complex nature of Refining and its operations.
- Understand 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, Technologists, Operating, and Supervisory personnel engaged in the refining activities who have a minimum of experience and who are required to understand and discuss issues related to their processes.
- Refinery scheduling staff, blending staff, and crude oil buyers.
- Engineering and operations personnel, this training program will also be suitable for business, sales, technical, and scientific personnel with limited or no broad refinery operating experience, along with Technical sales personnel.
- Those involved in selling equipment or supplies to the refining industry and those involved with economic evaluations of refinery operations will benefit.

## Program Outlines:

### Unit 1:

#### Crude Oil Yields Refinery Technology:

- 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.

## Unit 2:

### Petroleum Refinery Processes:

- Crude Processing.
- Desalting.
- Atmospheric distillation, Vacuum distillation.
- Heavy Oils Processing - Coking and Thermal Processes.
- Delayed Coking, Fluid Coking, Flexicoking and Visbreaking.

## Unit 3:

### Process for Motor Fuel Production:

- Fluid catalytic cracking, Hydrocracking.
- Cat Cracking.
- Isomerization.
- Alkylation.
- Hydrotreating.
- Catalytic Reforming.

## Unit 4:

### Supporting Operations:

- Blending for Product Specifications.
- Hydrogen production.

- Refinery Gas Plants.
- Acid Gas Treating.
- Sulfur Recovery Plants.

## Unit 5:

### Refinery Economics:

- Residue Reduction.
- Asphalt and Residual Fuel.
- Cost Estimation.
- Economic Evaluation.