

# € TRAINING

Oil and Gas Technology for Non Petroleum  
Professionals





# Oil and Gas Technology for Non Petroleum Professionals

## Introduction:

This training program is designed for non-technical professionals, providing an overview of the oil, gas, refining, and petrochemical industries. It bridges the gap for individuals in corporate offices, suppliers, and other related fields, equipping them with essential knowledge to thrive in various roles within the oil and gas sector.

## Program Objectives:

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

- Explore the origins and formation of oil and gas.
- Grasp knowledge into the basics of refining processes and petrochemical production.
- Differentiate between exploration, refining, and petrochemical processes.
- Identify the key building blocks of petrochemicals and their uses.
- Identify the refinery operations and the different types of refineries.

## Targeted Audience:

- Non-technical professionals in oil, gas, refining, and petrochemical sectors.
- Environmental, business, and financial professionals seeking to understand the industry.
- Newly hired or semi-technical personnel in refining and petrochemical plants.
- Managers and team leaders coordinating operations across technical and non-technical teams.

## Program Outline:

### Unit 1:

#### Origin and Nature of Petroleum:

- Understanding fossil fuels and their chemistry.
- Basic petroleum geology: formation and trapping of oil and gas.
- Exploration methods for oil and gas.
- Methods of oil and gas production.

- Transportation of oil and gas.

## Unit 2:

### Overview of Refining:

- Classification and types of hydrocarbons.
- Surface processing of oil and gas.
- Overview of different refinery types and complexity.
- Hydroskimming and cracking refineries.
- Refining margins, profitability, and netback factors.

## Unit 3:

### Refinery Process Operations:

- Physical separation processes: crude and vacuum distillation.
- Chemical conversion: gasoline production, hydrotreating, and catalytic reforming.
- Alkylation, isomerization, and their role in refining.
- Residue reduction methods: cat cracking, hydrocracking, and visbreaking.
- Coking, asphalt production, and residual fuel creation.

## Unit 4:

### Petrochemicals I - Production and Uses:

- Olefin-based compounds: ethylene, propylene, and butadiene.
- Uses of ethylene and propylene in the industry.
- Aromatic-based compounds: benzene, toluene, and xylene.
- Production methods for aromatic compounds.
- Importance of these compounds in industrial applications.

## Unit 5:

### Petrochemicals II - Production and Uses:



- Natural gas-based petrochemicals: ammonia and methanol.
- Gas-to-liquid technologies.
- Overview of global petrochemical production companies.
- The role of ammonia and methanol in the petrochemical industry.
- Future trends in petrochemical production and technologies.