

€ TRAINING

Hydrocarbon Production Operations





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Introduction:

This training program provides comprehensive instruction on the processes and techniques involved in hydrocarbon extraction and production. Through theoretical learning, this program equips individuals with the knowledge and skills necessary to effectively contribute to hydrocarbon production activities in the oil and gas industry.

Program Objectives:

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

- Explore global oil and gas-related statistics, including reserves, production, consumption, and exports.
- Gain insights into upstream, midstream, and downstream operations and their associated facilities.
- Acquire knowledge of various methods and techniques used in the exploration, drilling, production, treatment, and transportation of oil, gas, and their products.
- Understand the operations of various field facilities, encompassing the wellhead, flow lines, separators, tanks, pumps, compressors, pipelines, gas treatment and processing, as well as refinery operations.
- Grasp the fundamental concepts related to evaluating oil and gas reserves, artificial lift, and recovery enhancement.
- Recognize industry challenges such as offshore operations, horizontal drilling, and safety concerns.
- Develop a foundational understanding of petroleum economics and risk analysis.

Targeted Audience:

- Technologists.
- Mechanical engineers.
- Safety and Inspection engineers.
- Operations, Maintenance or project engineers.

Program Outlines:

Unit 1:

Introduction and Overview:

- Global Energy Statistics.
- Hydrocarbon Industry Components.
- The Upstream Operations..
- Exploration Methods.
- Seismic Surveys.
- Drilling Operation, Drilling Problems & Challenges.
- Well Testing, Completion, Well Stimulation & Maintenance.
- Hydrocarbon Production Problems.

Unit 2:

Hydrocarbon Properties:

- Rock Properties, Porosity & Permeability.
- Estimating Hydrocarbon Reserves.
- Oil & Gas Production, Oil & Gas Field Surface Facilities.
- Artificial Lift Methods & Facilities.
- Reservoir Drive Mechanisms, Reservoir Simulation.
- Pressure Maintenance Technology, Hydrocarbon Recovery Methods.
- Primary, Secondary & Tertiary Recovery.

Unit 3:

Downstream Operations:

- Wellheads Types
- Production Manifolds.
- GOSP Facilities.
- Oil & Gas Separation.
- Emulsion Treatment.
- Separator types, Operation & Troubleshooting.

- Oil Treatment, Storage & Transportation, Oil Tank Types.
- Gas Treatment & Processing.
- Process Troubleshooting.

Unit 4:

Heat Exchangers:

- Oil & Gas Measurement and Control.
- Pipeline Operation & Pigging.
- Valve Types.
- Pumps & Compressor Stations.
- Refinery Operations & Products.
- Operation Troubleshooting.

Unit 5:

The Role of Technology:

- Safety & Accident Prevention.
- Production Problems.
- Corrosion Protection & Cathodic Protection.
- Scale Prevention & Treatment.
- Petroleum Economics & Risk Analysis.