

# € TRAINING

Mastering Upstream and Downstream  
Dynamics in Oil and Gas





# Mastering Upstream and Downstream Dynamics in Oil and Gas

## Introduction:

This training program is designed to provide comprehensive instruction on the latest technologies, best practices, and management strategies in upstream oil and gas operations. It equips both petroleum and non-petroleum professionals with the knowledge and skills necessary to excel in the dynamic field of upstream energy production and management.

## Program Objectives:

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

- Gain a comprehensive understanding of the entire oil, gas, and LNG business, covering exploration, drilling, production, refining, petrochemicals, sales, marketing, and trading.
- Advance towards top-tier corporate positions by acquiring in-depth industry knowledge and expertise.
- Explore the technical and economic efficiencies in Upstream and Downstream operations, leveraging new technologies.
- Master petroleum economics, investment analysis, risk assessment, and project evaluation techniques.
- Evaluate fiscal terms, conditions, and global fiscal systems to enhance business acumen.
- Understand contract types such as Concessionary, Production Sharing, Service, Joint Venture Contracts in Upstream, and Sales, Marketing, and Trading Contracts in Downstream.
- Enhance comprehension of downstream fundamentals, including refined product quality, blending, valuation of oil for trade, freight calculations, refinery margins, vessel chartering, pipelines, and terminals.

## Targeted Audience:

- Business Development managers, Joint Venture officers, and Negotiators.
- Corporate Planning professionals and Equity analysts.
- Geoscience & Engineering professionals and Refinery professionals.
- Supply Planners & Scheduling professionals and Trading professionals.
- Government regulators, Compliance officers, and Law professionals.
- Tax & Finance advisors and Auditing personnel.

## Program Outlines:

### Unit 1:

#### General Industry Overview & Basic Concepts:

- Introduction to Oil & Gas Industry.
- Petroleum Industry Dynamics & Future Trends.
- Oil & Gas Geology.
- Oil & Gas Prospecting Exploration.
- Drilling Operations.

### Unit 2:

#### Upstream Success Factors:

- Technological Advances.
- Well Evaluation.
- Well Completions.
- Reservoir Depletion Mechanisms.
- Oil & Gas Surface Facilities.
- Transportation.
- Maintenance of Oil & Gas Facilities.
- Oil & Gas Reserves.

### Unit 3:

#### Profitably Managing Upstream Business:

- Oil & Gas Reserves.
- Reservoir Management.
- Crude Oil Refinery Products & Processes.
- Legal Framework of the Industry.
- Project Economics.

- Oil Price Risk Management.

#### Unit 4:

##### Upstream Production Contracts & Fiscal Systems:

- Relationships between Oil Companies and Host Governments.
- Understanding Petroleum Fiscal Systems.
- Identification of different types of fiscal terms and their application.
- Concession royalty/tax Contracts.
- Production Sharing Contracts.
- Service contracts and Joint Venture Contracts.
- Review & Comparison of Different Fiscal Systems in the world for the Petroleum Industry.
- Fiscal options and latest trends for Liquefied Natural Gas LNG projects.

#### Unit 5:

##### Petroleum Economics, Risk Analysis, and Project Evaluation:

- Petroleum dynamics - Global, Regional & OPEC production scenarios.
- Profitability indicators for oil & gas business.
- Comparison and investments selection criteria.
- Corporate portfolio management and maximize returns.
- Risk & Uncertainty analysis in capital investments.
- Evaluate projects by risk-based economics.
- Fundamental Considerations in Petroleum Project Evaluation.
- Investment Decision-Making Techniques.

#### Unit 6:

##### Petroleum Refining, Refined Products & Petrochemicals:

- Introduction to Petroleum Downstream Industry.
- Physical & Chemical properties of crude oil.

- Crude oil selection criteria for refinery.
- Essential of Petroleum Refining Industry.
- Major refinery processes and refinery units.
- Simple Hydroskimming Refinery, Deep Conversion Coking Refinery.
- Refinery Optimization.

## Unit 7:

### Global Oil Supply and Petroleum Economics:

- Making Downstream connection with Upstream Industry.
- The essence of International Oil Supply - Global Reserves, Production & Trade.
- Fundamentals of Oil Economics, Fundamentals of Crude Oil Transportation - Tankers and Chartering.
- Basic Principles in Pricing and Overview of Markets, Crude Oil Markets.
- Global Crude Oil Supply-Demand balance, and its impact on prices.
- 50-Years history of Crude Oil Pricing, and its current pricing dynamics.
- Marker crudes and crude oil Benchmarks.

## Unit 8:

### Downstream Value Chain Optimization:

- Essential Elements in Crude Oil Sales Contracts to Refineries.
- Basic Crude Oil Refining and Advanced Refinery Upgrades.
- Importance of Petrochemicals and its impact.
- Refining and Petrochemicals Integration.
- Value Chain Optimization and Maximizing Return on Investment.
- Managing Contractual and Environmental Risks.
- Pipelines, Storage and Transportation Logistics in Downstream.
- Refinery Economics and Optimization of Downstream.

## Unit 9:

## Downstream Market Structures and Trading:

- Introductory Concepts in Oil Trading.
- Interface with retailers.
- Downstream Supply Chain management.
- Total Barrel Economics.
- Oil Market Derivatives - Futures, Forwards, Swaps, Option.
- Price Volatility Exposure and its Defensive Practices.

## Unit 10:

### Downstream Petroleum Dynamics and Risk Management:

- Hedging - Risk Management.
- Pricing Management.
- Derivatives.
- Examples of Oil & Gas Futures Contracts, Swaps, and Options.
- Common mistakes by Oil & Gas Companies in Hedging.
- A Guide to Developing A Corporate Fuel Risk Management Policy.
- Challenges to Petroleum Industry and Trends in New Technology.