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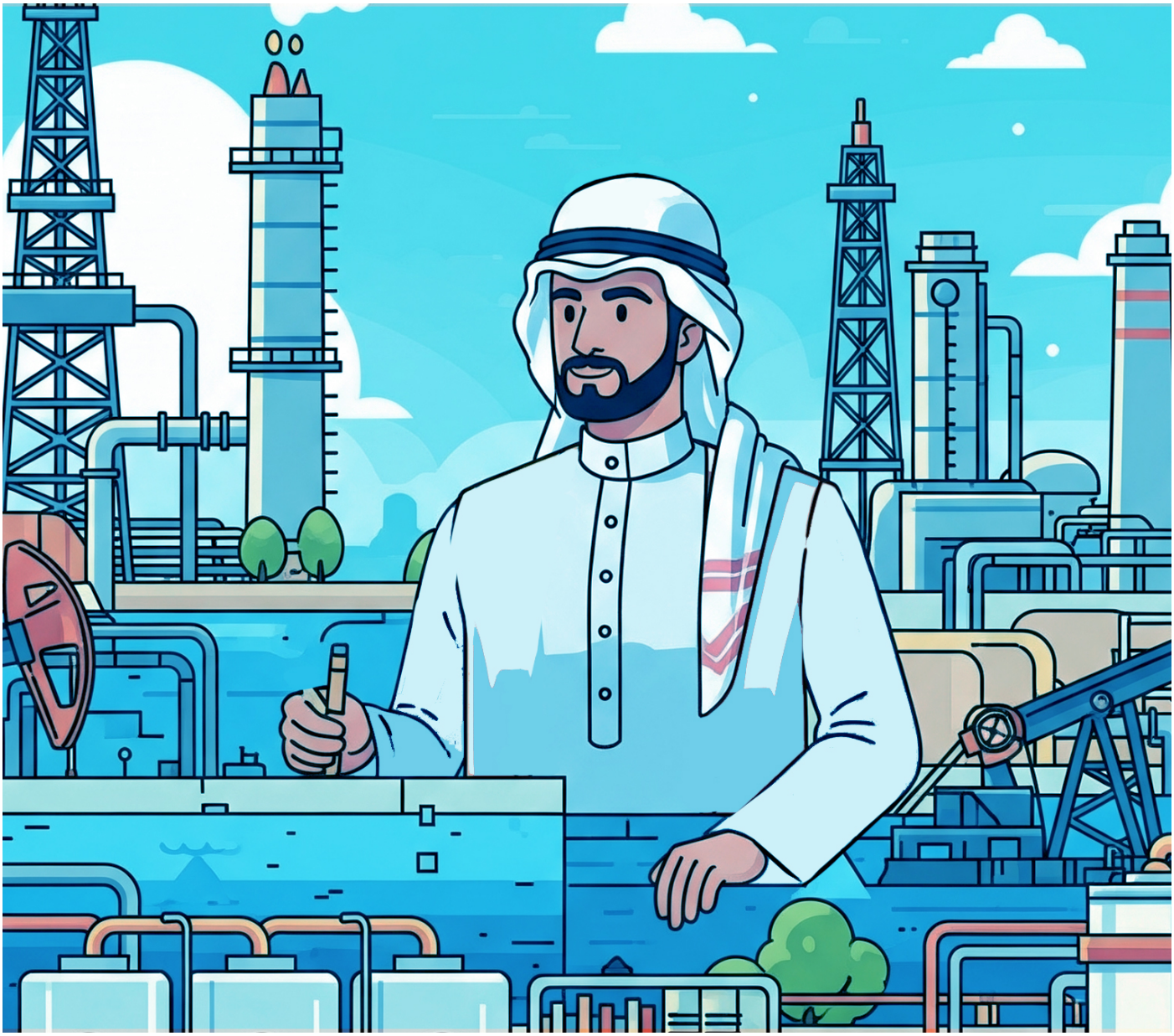

Oil, Gas and Chemical

Oil Production & Processing Facilities

Course Introduction

This course is designed to ensure awareness and effective understanding of various phases of production operation fundamentals throughout understanding the functions of various oil field components, well to processing facilities.

The course also addresses and emphasizes the fundamental understanding of wide range of oilfield production handling and treatment equipment not only “what” but “how” the field fluid treating equipment works.

The major objective of this course is to improve communication amongst the technical disciplines across organizations in order to enhance operational and cross functional work performance, promote cooperation and team work spirit amongst the teams across various organizations, optimize cost and improve production economics. This can be the operator's best insurance to achieve successful safe and cost effective operations.

Target Audience

- Production Engineers
- Operation Engineers
- Facilities Engineers
- Petroleum Engineers
- Field Production Supervisors
- Surface Equipment Technicians
- Field Facility Engineers/Operators

Learning Objectives

- Understand surface facilities components from well to production station

- Familiarize with the principles of Oil & Gas Separation
- Familiarize with the principles of Oil & Gas Dehydration
- Familiarize with the principles of Fractionation & Operations
- Familiarize with the principles of Refrigeration Operations
- Understand and identify the Operating problems
- Familiarize with the Pipeline Operations & Maintenance, Problems & Troubleshooting.
- Familiarize with the pipeline Pigging Operations
- Familiarize with types of Storage tanks, associated hazards & Safety
- Familiarize with various equipment and tools and its function.

Course Outline

- **01 Day One**

Module (01) Introduction and Overview on Oil & Gas

1.1 Petroleum Geology and Origin of Hydrocarbons

1.1.1. Formation of Oil

1.1.2. Oil and gas reservoirs

1.1.3. Reservoir rock and fluid properties

1.2 Exploration and Appraisal

1.2.1. Geological and commercial factors necessary for successful exploration and appraisal

1.2.2. Seismic surveys

1.3 Drilling

1.3.1 Drilling rigs

1.3.2 Equipment and processes involved in drilling a well

1.3.3 Completing a well and preparing it for production

1.3.4 Horizontal Drilling

1.3.5 Well workover operations

1.4 Oil Recovery Methodologies

1.4.1 Reservoir production mechanisms

1.4.2 Artificial lift systems

1.4.3 Well stimulation - fracturing, acidizing and sand control

1.4.4 Production and treatment of reservoir fluids

1.4.5 Processing the production from oil and gas fields

Module (02) Surface Facilities

2.1 Introduction 2.1.1 Field Development Overview

2.1.2 Why do we need Surface Facilities?

2.1.3 Data Required

2.1.4 Fluids Characterization

2.1.5 Surface Facilities Processes

2.1.6 Function of Surface Facilities

2.1.7 Hydrocarbon Specification

2.2 Well Control and Safety System

2.2.1 Wellhead, X-mas Tree and Wellhead equipment

2.2.2 Wellhead Control and Safety System

2.2.3 Choke valve (fixed, adjustable)

2.2.4 Flow Principles through Chokes

2.3 Gathering System

2.3.1 The manifold function in gathering stations

2.3.2 Flowlines

2.3.3 Horizontal pipe flow patterns

2.3.4 Multiphase flow Fundamental

2.3.5 Multiphase Flow Meters

2.3.6 Flowlines

2.3.7 Surge phenomenon

2.3.8 Manifold

2.3.8.1 Onshore

2.3.8.2 Offshore

2.3.8.3 Subsea

2.3.9 Pipelines

2.3.9.1 Monitoring

2.3.9.2 Maintenance

2.3.9.3 Pigging

- **02 Day Two**

Module (03) Oil & Gas Separation System

3.1 Introduction

3.2 Oil field separation Process

3.3 Principles of Separation

3.4 Phases Separation

3.5 Stage Separation

3.6 Separator Configurations

3.7 Separator Internals

3.8 Separation Operation problems & Troubleshooting

Module (04) Oil Dehydration System

4.1 Introduction

4.2 Emulsions & Emulsion Terminology

4.3 Emulsion Treatment Equipment

4.4 Emulsifying Agents

4.5 Demulsifiers

4.6 Factors affecting Emulsion Breakdown

4.7 Emulsion Treatment and process description

4.8 Factors affecting Emulsion Treatment

- **03 Day Three**

Module (05) Gas Dehydration

5.1 Introduction 5.2 Definition

5.3 Water/Hydrocarbon system Behaviors

5.4 Water content in in Natural gas

5.5 Water dew point

5.6 Dew point depression

5.7 Hydrates Control in Natural Gas Systems

5.8 Gas Dehydration system

5.9 Absorption using Liquid Desiccants (Glycol Dehydration)

5.10 Process flow & components

5.11 Process Operation& Variables

5.12 Operational Problems & Troubleshooting

5.13 Hydrate Inhibition at low temperature processing plant

- **04 Day Four**

Module (06) Well Completion Selection

6.1 Introduction

6.2 Liquid Separation Economics

6.2.1 Lean Oil Absorption

6.2.2 Refrigeration

6.2.3 Cryogenic

6.3 Gas Chilling

6.4 Cryogenic Process

6.4.1 Dehydration

6.4.2 Chilling

6.4.3 Fractionation

6.5 Refrigeration Systems

6.6 Single Component Refrigeration (Propane)

6.6.1 Refrigerant

6.6.2 Equipment

6.6.3 Principle of Operation, Problems and Controls

- **05 Day Five**

Module (07) Equipment & Process System

7.1 Pipe, Pipe fittings and associated equipment

7.2 Valves, Control valves, actuators & solenoids

7.3 Strainers & filters

7.4 Separators & Vessels

7.5 Heat & Heat transfer equipment; Coolers & Fin Fans

7.6 Pumps – centrifugal and reciprocating

7.7 Pressure, temperature, flow & level measurement

7.8 Turbines

7.9 Emergency Generators

7.10 DCS Basics

7.11 Process Drawings and nomenclature – P&IDs, PFDs

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
June 30, 2025	July 4, 2025	5 days	4250.00 $	UAE - Abu Dhabi
Aug. 4, 2025	Aug. 8, 2025	5 days	4950.00 $	Austria - Vienna
Dec. 15, 2025	Dec. 19, 2025	5 days	4250.00 $	UAE - Dubai
Feb. 10, 2025	Feb. 14, 2025	5 days	4250.00 $	UAE - Dubai
Oct. 5, 2025	Oct. 9, 2025	5 days	4250.00 $	oman - salalah