



Oil, Gas and Chemical

## Well Completion Design

# Course Introduction

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In the development of a hydrocarbon reservoir, many wells are drilled and required to be completed, to allow the structure to be depleted. However, the drilling and completion operations are crucial to the long term viability of the wells in meeting the specified objectives.

**The design and completion of both production and injection wells are required to satisfy several objectives including:**

- Provision of optimum production/injection performance
- Ensure safety
- Maximize the integrity and reliability of the completion over the envisaged life of the completed well
- Minimize the total costs per unit volume of fluid produced or injected, i.e.
- Minimize the costs of initial completion, maintaining production and remedial measures

## Target Audience

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- Process design
- Unit Operator
- Environmental
- Process safety engineer
- Gasoline blender engineer
- Lab supervisor
- Supply chain engineer
- Distillates analyst
- Models engineer
- Chemical Operator
- Chemical Plant Operator
- Chemical Process Technician
- Control Room Supervisor
- Gas Plant Process Operator

- Gas Production Operator
- Gas Terminal Operations and Storage
- Gathering Pipeline engineer
- Oil Terminal / Storage engineer
- Pipeline Maintenance / Equipment / Compliance / Repair
- Pipeline Testing / Technician / Supervisor / Safety
- Plant Equipment Operator
- Plant Operations Technician
- Plant Shutdown
- Plant Supervisor
- Power Distribution
- Power Plant Manager
- Process Supervisor
- Refinery Operations Technician / Manager
- Terminal Operator / Manager
- Utilities Operator

## Learning Objectives

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- Production Packer functions
- Packers Types
- Packers Generic Mechanisms
- Permanent and Retrievable Packers

## Course Outline

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- 01 Day One

### **Well Completion Design, Practices and Strategies**

- Introduction of Reservoir Drive Mechanism

- Introduction into Artificial lift methods and their application
- IPR and Productivity Index
- Vertical Lift Performance
- Well Outflow and Inflow Systems
- Typical Vertical Lift Performance (VLP) for Various Tubing Sizes
- Matching VLP Curves with an IPR Curve
- Well Completion Design Considerations
- Reservoir Considerations
- Mechanical Considerations
- Classification of Completions

## • 02 Day Two

### **Lower & Upper Completion String Components & Selection Consideration**

- Production Packer functions
- Packers Types
- Packers Generic Mechanisms
- Permanent and Retrievable Packers
- Locator Seals and Anchor Seals
- Applications for Permanent and for Retrievable Packers
- Setting Packers
- Inflatable Packer Applications
- Sliding Side Door Function
- Gas Lift Mandrel
- Running the Completion
- Perforation Methods and Perforating Equipment
- Perforation Selection and Conveying Methods

## • 03 Day Three

### **Wellheads / Sub-Surface Safety Valves & Flow Control Equipment**

- Wellheads Components, Function and Types
- Subsurface Safety Valves Function
- Safety Valves Types
- Setting Depth of Subsurface Safety Valves Consideration
- Surface Control Subsurface Safety Valves
- Flow Control Devices
- Nipple Profiles Types and Plug Selection

- Workover Reasons
- Well Killing Operations Technique and Consideration
- Example for Workover Operations (Gas lift wells, Natural gas well, ESP well)

## • 04 Day Four

### **Overview of Sand Control Completion**

- Sandstone Formation Properties and Geology
- What causes Sand Production?
- Consequences of Sand Production Downhole and on Surface
- What is the mean of sand control?
- Perforation System for Non-sand Control Completion
- Sand Control Options
- Chemical Consolidation
- Mechanical Sand Control Methods
- Cased Hole Gravel Pack
- Open Hole Gravel Packing
- Expandable Screens
- Gravel Pack Design, Gravel Sizing and Slot Sizing
- Placement Methods
- Carrier Fluid Concept
- Choosing the Appropriate Method of Sand Control
- Losses Controlling during Sand Control Operations
- Perforating System for Sand Control
- Standalone Screen Applications

## • 05 Day Five

### **Fundamentals of Rigless Operations Theory & Stimulation**

- Coiled Tubing Surface and Subsurface Components
- Coiled Tubing Applications
- Cleaning Operations with CT
- Well Back Flow (nitrogen lift)
- Wireline Types and Application
- Surface and Subsurface Components of Wireline
- Formation Damage Mechanisms and their Remediation
- Stimulation Design Considerations
- The Most Important Production Logging (PLT)

## Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
May 4, 2025	May 8, 2025	5 days	4250.00 \$	Bahrain - Manama
May 5, 2025	May 9, 2025	5 days	4250.00 \$	UAE - Dubai
July 7, 2025	July 11, 2025	5 days	4950.00 \$	England - London
July 21, 2025	July 25, 2025	5 days	4250.00 \$	UAE - Abu Dhabi
Sept. 1, 2025	Sept. 5, 2025	5 days	4250.00 \$	UAE - Dubai
Oct. 6, 2025	Oct. 10, 2025	5 days	4250.00 \$	UAE - Abu Dhabi