Well Completion and Well Testing

Course Price

£3250

Course Description

This short course places emphasis on the role of the Well, as part of the Integrated Production System. Well Completion design concepts and the technical selection criteria for the main completion components are reviewed in detail. Group exercises on Completion and Performance are also part of the learning process. The course also highlights the Operating Company’s viewpoint in the area of Well Completion and Well Production Management.

Course Objectives

By the end of the course, participants should be able to: State how Well Completion fits into the E&P Activity; Recall and discuss hydrocarbon exploitation considerations for well productivity and completion design; Describe the main parameters that influences Well Performance and Productivity; Describe the factors that influence the selection and design of the completion string and components; Carry out a completion design on the Onshore and explain how it will be run in the well, Type of well test, planning the test, Surface Equipment and downhole tools.

Who Should Attend

Geo-scientists, Engineers and Managers (in Drilling, Well Intervention/Services, Reservoir Engineering, Production Operations, Marketing/Sales etc.), whose jobs require them to interface with Completion Engineers, Production Technologists, Well Production Operations Engineers, and Well Maintenance/Servicing Engineers who wish to enhance their current job effectiveness, through more knowledge on Well Completion and Performance, than that attained from their own “core” discipline training and exposure.

Course Content

Day 1

1. Introductions
2. Reservoir -Integrated Production System

- Pressure drop from reservoir to stock tank

3. Well Completion Methods

- Open hole completions
- Cased hole completions

4. Classification of Reservoir Based on the Fluids in the Reservoir

- Reservoir fluid properties
- Oil gravity
- Formation volume factor
- Data ranges
- Reservoir water
- Contaminates
- Phase behavior

5. Completions Effects

- Formation damage
- Pressure drop – radial flow
- Damage vs. productivity

Day 2

1. Flow in Pipes

- Fluid flow equation

2. Choke Performance

- Multiphase flow through choke
- Positive vs. variable choke

3. Systems Analysis

- Inflow performance
- Outflow performance

4. Tubing considerations

- Tubing vs. casing

5. Completion String Design

- Casing design factors
6. Completion Equipment

- Completion rig
- Snubbing unit
- Coil tubing unit
- Wireline unit

Day 3

1. Casing and Casing Suspension

- Casing heads

2. Wellheads

- Tubing heads
- Xmas trees

3. Tubing Selection

- Tubing requirements
- Tubing design factors
- Coil tubing design considerations

4. Tubing Connection

- Types/applications

5. Packers

- Types/applications

6. Wellsite Operation

- Project Management
- Why projects fail
- Soft Skills
- Managing drilling & completion data
- Non-productive time
- Invisible lost time
- Knowledge data base

Day 4

1. Subsea Completions

- Intelligent completions
- Extended reach drilling
- Maximum reservoir contact
1. Permanent downhole gauges
   Flow control valves

2. Flow Assurance (Paraffin and Asphaltene)
   Formation/build up in tubulars
   Removal processes

3. Well testing overview
   Procedures
   Hardware

4. Completion Test
   Objectives

Day 5

1. Drill Stem Test
   Equipment
   Procedures

2. Surface Equipment
   Separators
   Dehydrators
   Compressors
   LACT equipment

3. Summary
4. Testing

CPD Unit

Continuing Professional Development

35 HOURS CPD