Intelligent Completions

Course Price

£2950

Course Description

Course Objectives

The objective of this training course is to provide an understanding of intelligent completions and specifically: –

- The value proposition for ICs
- The purpose of Intelligent Completions (ICs)
- The advantages and limitations of ICs
- Basic screening questions and defining completion requirements
- A history and case studies showing typical applications of intelligent completions
- Reservoir Monitoring Technologies (electrical and fiber optic) and their applications
- What are Inflow Control Valves (ICVs) and Inflow Control Devices (ICDs), a comparison of technologies and their difference and applications
- New technologies – integrated Intelligent Completion Systems
- The ‘digital oil field’. Intelligent wells in hydrocarbon recovery optimization and the integrated production management system

Who Should Attend

This interactive training course is intended **for engineers, supervisors and technical staff** involved in **completion design, installation and operation** who already have an understanding of well construction methods and completion design but would benefit from the understanding of processes, hardware and methodologies which make up Intelligent Completions/Smart Wells for application within an integrated production management system.

Course Content

Topics to be discussed: –

- Need & necessity for Intelligent Completions
- Intelligent Completions typical applications
- Integrated downhole operations

- Applications of digital-oil-field
- Downhole hardware, sensors
- Surface acquisition and data communication
- Passive and active control, descriptions, advantages & limitations, comparison
- Reliability and installation issues

DAY 1

INTRODUCTION, BACKGROUND and DEFINITIONS.

- Introductions and understand class competencies
- Scope of Course
- A bit of history, How and where it all started
- Importance of Well Monitoring
- Intelligent Completions, Definitions, applications, functionalities, purpose, types
- Advantages & Limitations of Intelligent Completions in typical applications
- ICs economics, brief look into the economics and justification of Intelligent Completions

DAY 2

SENSORS, DATA MANAGEMENT and 'INTELLIGENCE'

- Electrical monitoring technologies and applications
- Fiber Optic monitoring technologies and applications
- Pressure temperature and multiphase flow monitoring
- Sensor & hardware reliability
- Future of data management
- Downhole Sensors, Characteristics, Metrology, Functions, Materials
- Sensors, Data and information technology

DAY 3

INFLOW CONTROL VALVES & DEVICES

- Flow Regulation
- System reliability
- Design of Inflow Control Valves
- Intelligent Completion Hardware, ICD (Inflow Control Device) and ICV/FCV Interval/ Flow Control Valves/Devices, Characteristics, Functions, Materials
- Fixed choke systems
- Variable choke systems
- Hydraulic vs. electric systems
- Erosion/Corrosion and Scale Issues
- Passive versus active control – differences, advantages, limitations, comparison
- New integrated Intelligent Completion technologies

Day 4

INTEGRATED PRODUCTION MANAGEMENT

- Intelligent / Digital / Smart Oilfield and Real-time production optimization
- What is the ‘Digital Oil Field’?
- What were DOF technology enablers?
- Reservoir Management Using Intelligent Wells
- Reservoir monitoring
- Flow optimization

- Data acquisition / data management
- Overview of Advanced Reservoir Management

COMPLETION OPERATIONS, TRAINING & REVIEW

- Completion design considerations: interfaces, torque and drag, tubing stress analysis
- Well control and integration with ‘Permit to Work’ systems
- Contracts overview
- Engineer training and competency considerations

COURSE WRAP UP AND REVIEW

CPD Unit

Continuing Professional Development

28 HOURS CPD