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
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