Hydraulic Fracturing

Course Price

£3050

Course Description

Understanding the concepts and getting practical knowledge and learn how to get the optimum design of hydraulic fracture treatment for various reservoir types in order to improve well productivity. Also, the course will cover the execution and post treatment evaluation for real case histories.

Course Objectives

To provide attendees with a working knowledge of fracturing design and fracturing procedures. Learning the practical application of different types of fracturing jobs and use of additives to produce specific fracturing fluid properties. Learning how to evaluate the success or failure of a fracturing job.

Who Should Attend

This short course is intended for Drilling / Completion, Reservoir, Production Engineers, field supervisors and engineering technicians who are involved in planning, designing and execution of hydraulic fracturing treatment.

Course Content

This training will cover all the related issues to Hydraulic Fracturing concepts including but not limited to the followings:

- Introduction to hydraulic fracturing
- Hydraulic fracturing selection criteria
- Data acquisition and core measurements
- MicroFrac & MiniFrac testing
- Determining In-Situ stresses
- Fracture initiation and growth analysis
- Fracture containment considerations
- Fracturing fluids and additives properties and selection
• Proppant properties and selection
• Hydraulic fracture treatment design
• Hydraulic fracturing models
• Acid fracturing
• Frac & Pack
• New developments in hydraulic fracturing
• Hydraulic fracture treatment execution
• QA/QC of fracturing treatments
• Post treatment evaluation
• Hydraulic fracture class exercise

Day 1

1. Introduction
   1. Objectives of Hydraulic Fracturing
   2. Candidate Selection
   3. Developing Data Sets
   4. Fracture Treatment Optimization
   5. Field Considerations

2. Fracture Mechanics
   1. In-Situ Stresses
   2. Basic Rock Mechanics
   3. Fracture Orientation
   4. Net Pressure

Day 2

1. Fracture Propagation Models
   1. Two-Dimensional Fracture Propagation Models

1. Fracturing Fluids and Additives
   1. Properties of a Fracturing Fluid
   2. Fracture-Fluid Additives

Day 3

1. Propping Agents and Fracture Conductivity
   1. Types of Propping Agents
   2. Factors Affecting Fracture Conductivity
   3. Proppant Transport

1. Fracture Treatment Design
   1. Data Requirements
   2. Evaluating Risks in the Design

Day 4

1. Acid Fracturing
   1. Acid-Fracturing Candidate Selection
2. Acid Fluids Used in Fracturing
3. Acid-Fracture Design Considerations

1. Fracturing High-Permeability Formations
   1. Candidate Selection Criteria for High-Permeability Formations
   2. Design Considerations for High-Permeability Formations

Day 5

1. Fracture Diagnostics
   - Direct Far-Field Techniques
   - Direct Near-Wellbore Techniques
   - Indirect Fracture Techniques
   - Net-Pressure Analysis

1. Post-Fracture Well Behaviour
   1. Productivity Index Increase
   2. Ultimate Recovery for Fractured Wells
   3. Post-Fracture Well-Test Analyses

CPD Unit

Continuing Professional Development

35 HOURS CPD