

Applied Structural Geology in Hydrocarbon Systems Analysis



Table of Contents:

- Introduction
- Course requirement
- Who should attend?
- Course Outline



1st floor, Incubator Building, Masdar
City, Abu Dhabi, UAE



00971-2-6452630



00971-50-6652671



info@btsconsultant.com



www.btsconsultant.com

Introduction:

This 5-day course provides participants with an understanding of rock deformation processes that is appropriate for planning exploration strategies, and for developing better interpretations of existing data. It differs from other courses that are primarily descriptive by relating structural geology to a practical approach to geomechanics.

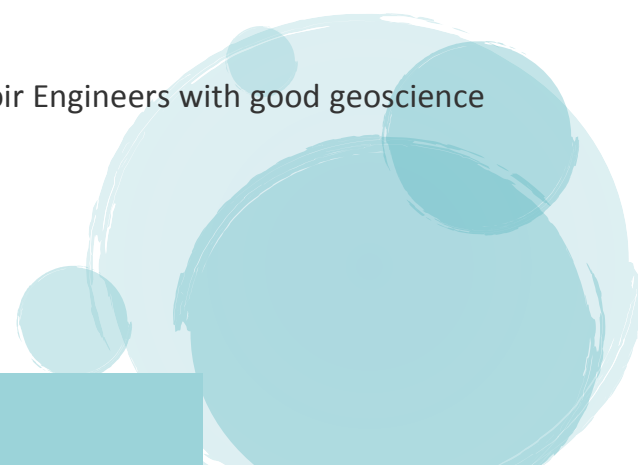
The course emphasises the role of structural geology in controlling fluid flows in the subsurface. Attendees will learn some of the standard techniques used for estimating the flow consequences of deformation. Participants will be presented with a new geomechanics paradigm that focuses on the key aspects of the deformation systems.

Course requirement:

Participants will gain most from the course if they have previously had some training in standard structural geology. However, people without this background, but who have a broad industrial experience-base, can also benefit from the course.

Who should attend?

Geoscientists working in Exploration or Production; Reservoir Engineers with good geoscience understanding or an interest in learning how things work.



Course Outline

1. Well Performance

- Refresher
- Inflow & Outflow Performance
- Completions Inflow Performance
- Computerized Well Performance Prediction
Computer Programs

- Well Performance Sensitivities
- Perforating & Advanced Perforating
- Smart Wells: Applications and Case Histories
- Coiled Tubing Completion Strings
- Downhole Oil/Water Separation: Technology & Economic modelling

2. Selection of Artificial Lift Techniques

- Rod Pump
 - Basic equipment design
 - Operating practices

- **Electrical Submersible Pumps**
 - Basic equipment design
 - Components
 - Operating Practices
 - New applications
- **Hydraulic Pumps**
 - Basic equipment design
- **Progressive Cavity Pumps**
 - Basic equipment design

3. Gas Lift


- Introduction
- Application
- Design Objectives
- The Unloading Process
- Side Pocket Mandrels
- Gas Lift Valve Mechanics
- Gas Lift Design
- Operational Problems

- Gas Lifted Field Optimization
- Intermittent Gas Lift
- New Technology

4. Formation Damage

- Concept of Skin
- Sources of Skin
- The many Formation Damage Sources and the technique used to reduce its impact on well impairment
- Formation Damage during Workovers
 - Prevention

5. Matrix Acidizing Treatments

- Well stimulation Economics
 - Well Candidate Selection
 - Design of Matrix Stimulation treatment parameters
 - Acid Formulations, Volumes, Rates, Additives, Treatment type, Diversion, etc.
- 

- **Conformance Control**

- Sources of "bad" water
- Matrix and Fracture shut-off treatments

- **Hydraulic Fracturing**

- Candidate Selection Guidelines
- Fractured Well Inflow Performance
- The Propped Hydraulic Fracturing treatment
- Rock Mechanical Issues important to Hydraulic Fracturing
- Fracture Fluid & Proppant Selection
- Optimization of Hydraulic Fracture Dimensions
- Tip Screen out Fracturing

- Matrix Stimulation Campaign Case Histories
- Stimulation of Carbonate Formations
- Acidizing Special Well Types
- Coiled Tubing Jetting
- Coiled Tubing Stimulations

- **Unstable Formations and Sand Control**

- Types of Sand Production
- Fill Removal with Coiled Tubing
- Prediction of Sand Failure
- Cost of Sand Control
- Sand Exclusion Techniques

- Detailed description of Gravel Packing Technology
- Chemical Sand Control
- Sand Control Installation using Coiled Tubing
- New Technology

- **Coiled Tubing**

- Technology
 - Well Unloading and kick-off
 - Drilling
 - Cementing
 - Electric Line Applications
- 