TECHNICAL
EDUCATION
ACADEMY

School of Engineering

COURSE PROGRAMME

000584

WELL011 - Introduction to Coiled Tubing Operations

Coiled tubing is chosen over conventional straight tubing because conventional tubing has to be screwed together.



Learn from the Best in the Business!

Course overview

Foundation level

Why take this course

Coiled tubing is chosen over conventional straight tubing because conventional tubing has to be screwed together. Additionally, coiled tubing does not require a workover rig. Because coiled tubing is inserted into the well while production is ongoing, it is also a cost-effective choice and can be used on high-pressure wells.

There are a number of well intervention operations that can be achieved via coiled tubing. These include cleanout and perforating the wellbore, as well as retrieving and replacing damaged equipment. Additionally, coil tubing drilling is now implemented in niche-areas and in particular in association with underbalanced drilling.

This Introduction to Coiled Tubing Operations course will begin with a brief review and refresher of basic Coiled Tubing equipment and well control components. The remainder and primary focus of the seminar will be on job design consideration, safety considerations, and job execution of common Coiled Tubing intervention job types including: Nitrogen lifting, Proppant or fill cleanout, Milling, Acid Stimulation, logging, and perforating.

Who it is for and how it helps

The course was developed for engineers and technicians that need to learn the fundaments of Coiled Tubing Operations.

What you will learn

- Plan, design, manage and execute Coiled Tubing interventions
- Improve the overall operational performance during Coiled Tubing interventions
- Select or recommend Coiled Tubing equipment for given field conditions and applications
- Select the proper pressure control equipment for any particular well condition
- Calculate the appropriate size of accumulators for a Coiled Tubing unit
- Select the most commonly used downhole tools and explain their function
- Calculate and define Coiled Tubing string limits
- Recognize, prevent, and manage corrosive and sour conditions and their impact
- Work safely with liquid nitrogen
- Calculate nitrogen volumes required for a given application
- Take appropriate actions during emergency responses and contingencies

Curriculum

Modules 01–04

01 Coiled Tubing Equipment and Well Control

- Introduction to Coiled Tubing operations
- Basic Coiled Tubing Equipment
- Well Control Equipment
- Coiled Tubing Pipe Manufacturing
- Tubing String and Pipe Management
- Data Acquisition
- Importance of nitrogen in stimulation and workover
- Importance of coiled tubing in completion and workover

02 Nitrogen - nitrified acid - foamed acid

- Nitrogen (properties, basic formula for design)
- Specifications for nitrogen storage and pumping equipment
- Two-phase fluids and foams (properties, chart and tables for design, difference between foam and two phase fluids), diverting effect of foamed fluid
- Stimulation methodology, flow back procedure

03 Coiled tubing equipment

- Main components: reel, injector, BOP and related equipment
- Auxiliary equipment: crane, pumping equipment, etc.
- Downhole tools: connectors, safety equipment, circulating tools, downhole motor, fishing tools, inflatable packers, etc.
- Guide for safe equipment rig-up

04 Pipe characteristics & behavior

- Geometric and mechanical properties: geometry, metallurgy, performance, characteristic curve
- Tubing behavior (at surface, in hole): fatigue, buckling, tension and pressure limits (tubing force analysis, model for operation design)
- Measuring and recording of operating parameters

Curriculum

Modules 05–06

05 Coiled tubing applications

- Kick off with nitrogen, underbalance perforating
- Well clean out (fill removal, wax and hydrate removal)
- Sand control
- Matrix treatment: acid, solvent
- Other applications: CT assisted DST, conveyed tool operations in high deviated well, use as producing, gas-lift or chemical injection string, fishing, underreaming, drilling
- Statistics, economy, areas for future development.

06 Cementing operations with nitrogen or coiled tubing

- Foamed cement: definition, use (primary cementing, squeeze)
- Cementing through coiled tubing: cement plug, squeeze (squeeze slurry characteristics, job design, key-points)

Joining the programme

Contact the Academy and quote course code 000584 to confirm dates, delivery format, prices and enrolment terms.

Training for your team

Tell us your business goals, the roles and number of participants, and your preferred dates and location. This will help us discuss the right training option.

Preparing for the programme

The published programme does not specify any prerequisites. Contact us before enrolling to confirm how to prepare.

Discuss your training needs

mail@tecedu.org
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