TECHNICAL
EDUCATION
ACADEMY

School of Engineering

COURSE PROGRAMME

000519

WELL014 - Advanced Well Testing Operations

The training program on advanced well testing methods offers a unique combination of theoretical knowledge and practical skills, specially designed for professionals in the oil and gas industry.



Learn from the Best in the Business!

Course overview

Duration: 5 days / 40 hours · Advanced level

Why take this course

The training program on advanced well testing methods offers a unique combination of theoretical knowledge and practical skills, specially designed for professionals in the oil and gas industry. This comprehensive course is meticulously planned to cover a broad spectrum of topics—from health, safety, and environmental protocols (HSE) to the nuances of perforation using tubing-conveyed perforating systems (TCP) and testing with drill stem test assemblies (DST). We immerse participants in the world of fluid analysis, interpretation of well test results, and data collection, with a major emphasis on designing operations in complex conditions such as deepwater and high-temperature operations, and wells with high-pressure, high-temperature downhole conditions.

What sets this program apart is its modular structure, which allows participants to acquire specific skills relevant to their roles while simultaneously developing a comprehensive understanding of advanced well testing methods. This course is aimed at experienced well test engineers, reservoir engineers, drilling engineers, field supervisors, and even quality control specialists. The course is designed to enhance your skills in all aspects related to the well testing process.

This course is more than just a training program; it is an investment in your professional growth. Participants will leave the course with the ability to integrate knowledge across different areas and adhere to industry standards, ensuring safety and quality in service delivery. Don't miss the opportunity to take your career to a new level and more effectively contribute to the success of your organization

Who it is for and how it helps

This training program on advanced well testing methods is designed for the following categories of professionals: experienced well test engineers, reservoir geologists, drilling engineers, production engineers, field supervisors and managers, geologists and physicists of reservoirs, technical assistants and analysts, health, safety, and environmental (HSE) specialists, quality control and assurance specialists, and service company representatives

What you will learn

- Understand and implement health, safety, and environmental (HSE) guidelines in well testing operations at all stages of the process
- Apply advanced techniques for reservoir fluid sampling and understand the types of analyses conducted in fluid analysis laboratories
- Organize and manage the technology of perforation using tubing-conveyed perforating systems (TCP), including advanced service provision procedures, correlation, selection, and preparation of equipment
- Organize and control all stages of operations using drill stem test assemblies (DST)

Course overview — continued

- Implement advanced procedures and safety aspects in operations with onshore equipment complexes for well testing
- Use Hazard and Operability Study (HAZOP) methods to identify and mitigate risks in well testing operations
- Apply advanced data collection methods, including well test data acquisition (TDA) and multiphase flow meters such as Vx
- Integrate knowledge across different areas to develop comprehensive well testing strategies that meet industry-leading standards

Curriculum

Modules 01–04

01 Preliminary Concepts of Well Test Design

- Introduction and organization of complex operations design (safety criteria and requirements in preparation and conducting deepwater and high-temperature operations)
- Minimum requirements for information necessary for the preparation and organization of well testing. Analysis of data on test objects, general information about the well
- Formation of a general project decision: team, logistics, field staff, volume of equipment, duration of operations, identification of key needs and time costs

02 Understanding Reservoir and Reservoir Fluid Analysis

- Introduction to inflow/outflow relationships and nodal analysis
- Basic properties of fluids (density, specific gravity, viscosity). Basic hydrostatic formulas and calculation methods
- Classification of reservoir fluids
- Phase envelope and phase behavior
- Pressure as a function of fluid properties (reservoir volume factor, gas factor, density)

03 Advanced Sampling and Analysis

- Advanced sampling and analysis of reservoir characteristics
- Fluid analysis laboratories, types of analyses and services they perform
- Special PVT (Pressure-Volume-Temperature) analysis in the laboratory, flow assurance studies
- PVT analysis during well testing
- Introduction to sampling procedures and quality assurance of sampling (selection of seals, high H2S content tools, coated tools, working fluid calculation)

04 TCP and DST Methods (Expanded Procedures)

- TCP (Tubing Conveyed Perforating) service procedure
- Key points of safe operation in providing TCP services
- Concept of perforator charging procedure, types and methods of applying explosive heads. Calculation of charge penetration for the TCP procedure
- Lowering perforators into the well. Correlation and fitting the position of perforators
- DST (Drill Stem Test) service procedure

Curriculum

Modules 04–07 · Module 04 — continued

- Designing DST operations and calculating DST layout
- Analysis of a typical DST layout: composition, purpose, working principle, technical features of DST layout elements
- Features of working on deepwater wells. Use of subsea test tree equipment
- Assembly, lowering into the well, conducting correlation. Packer seating, valve activation, perforation, beginning of well testing

05 Ground (Deck) Complex for Well Testing

- General information about the elements of the ground (deck) complex for well testing
- Safety aspects and considerations when operating the ground (deck) well testing complex
- Design and preparation of work
- Creation and editing of pipeline and instrument diagrams
- Detailed information about elements of the ground (deck) complex equipment: composition, characteristics, purpose, working principle
- Equipment preparation for operation, conducting checks and pressure testing, tuning
- Starting well fluid. Well cleaning procedure, working on modes, accumulation and disposal of fluid, preparation for sampling
- Diligence and responsibility in conducting well tests

06 Data Collection and Software Tools

- HAZOP (Hazard and Operability). Process of detailing and identifying hazard and operability issues
- Well test data collection (TDA) and application of multiphase flowmeters (Vx)
- Introduction to data collection and transmission reports (DART or equivalents), as well as the possibility of real-time connection, collaborative work, and information service (InterACT or equivalents)
- Programming and lowering of downhole sensors. Lifting to the surface, data reading. Output and preliminary interpretation of the obtained data

07 Interpretation of Well Tests

- Subject of hydrodynamic well studies
- Advanced interpretation of well test results
- Introduction to well studies by pressure transient analysis (PTA)

Programme instructor



Степан Кузьмин

От геологии до высокотехнологичного оборудования

Степан — выдающийся специалист с более чем двадцатилетним опытом работы в области геологии и разработки месторождений, а также в области испытаний и исследований оборудования для бурения. Его профессиональный путь начался с образования в Мурманском Государственном Техническом Университете, где он получил степень магистра техники и технологии по специальности "Геология и разведка месторождений полезных ископаемых".

На протяжении своей карьеры Степан демонстрировал глубокие знания и умения в сфере геологической разведки и разработки, что позволило ему успешно руководить сложными проектами в компаниях международного уровня, таких как "PETROALLIANCE SERVICES COMPANY LIMITED" и "МУРМАНСКАЯ ГЕОЛОГИЧЕСКАЯ СЛУЖБА". Его роль в этих организациях включала мониторинг полного цикла строительства скважин, контроль за основными параметрами процесса бурения, а также разработку и реализацию новых технологий для оптимизации буровых операций.

Степан также обладает значительным опытом в инженерном анализе и испытаниях бурового оборудования, что делает его ценным активом в любой обучающей программе, направленной на подготовку специалистов в области нефтегазовой инженерии. Его способность применять комплексные подходы в решении инженерных задач и внедрение новшеств, доказывает его квалификацию как преподавателя и наставника.

Кроме технического мастерства, Степан известен своими лидерскими качествами и умением работать в мультикультурных командах, что неоднократно подтверждалось в ходе его работы над международными проектами. Его опыт в координации международных команд и проведении технических обучений и семинаров является неоценимым для подготовки новых кадров, способных эффективно работать в современной производственной среде.

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Participant ratings

Programme evaluation based on participant feedback

Overall programme rating — 5.0 / 5

Clarity of learning objectives	**5.0 / 5**
Confidence in applying knowledge and skills	**5.0 / 5**
Achievement of learning objectives	**5.0 / 5**
Relevance of content to job tasks	**5.0 / 5**
Suitability of difficulty for the level of preparation	**5.0 / 5**
Increase in knowledge	**5.0 / 5**
Skills development	**5.0 / 5**
Willingness to recommend the programme to colleagues	**5.0 / 5**

10 responses

Joining the programme

Contact the Academy and quote course code 000519 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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