TECHNICAL
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ACADEMY

School of Engineering

COURSE PROGRAMME

000703

Development Geology



Learn from the Best in the Business!

Course overview

Duration: 5 days / 40 hours · Intermediate level

Why take this course

The Development Geology in Oil and Gas training programme is an intensive course designed to equip geoscientists, engineers, and industry professionals with the technical expertise required to drive successful oil and gas field development projects. This programme delves deep into the intricacies of subsurface data acquisition, reservoir characterization, and field development planning, offering participants a robust framework to interpret and manage geological uncertainties.

Participants will explore the lifecycle of oil and gas projects, gaining insights into seismic data interpretation, petrophysical analysis, and the construction of static reservoir models. Advanced techniques such as deterministic and stochastic modeling, volumetric reserve estimation, and enhanced oil recovery (EOR) strategies are integral parts of the curriculum. Moreover, the programme emphasizes practical application through hands-on exercises using real-world data, including dynamic exercises that simulate complex field challenges.

By the end of the course, attendees will possess the skills to optimize hydrocarbon recovery, rejuvenate aging fields, and integrate geological insights with economic evaluations to ensure project viability. Designed for professionals with a foundational understanding of geology and engineering, this training bridges the gap between theoretical knowledge and practical application, preparing participants to tackle modern challenges in oil and gas field development.

With expert-led sessions, interactive workshops, and comprehensive learning materials, this programme offers a transformative experience that empowers industry professionals to make informed decisions, maximize field performance, and contribute to the sustainable development of energy resources.

Course overview — continued

Who it is for and how it helps

Petroleum Geologists and Geophysicists responsible for subsurface data interpretation and reservoir characterization.

Reservoir Engineers focused on optimizing hydrocarbon recovery and reservoir management strategies.

Field Development Managers overseeing the planning and execution of oil and gas development projects.

Exploration Managers involved in the exploration phase, including seismic data acquisition and interpretation.

Drilling Engineers and Technicians involved in well design, drilling operations, and data acquisition.

Project Planners and Developers responsible for project activities planning, resource allocation, and risk management.

Environmental and Regulatory Specialists ensuring that development projects comply with environmental and regulatory standards.

Junior Geoscientists and Engineers seeking to deepen their understanding of development geology in oil and gas.

Academics and Researchers focused on petroleum geology and reservoir engineering.

What you will learn

- Comprehend the scope, lifecycle, and strategic importance of oil and gas development projects within the global energy sector.
- Master seismic data acquisition, processing, and interpretation techniques to inform exploration and development decisions.
- Utilize petrophysical analysis, well data interpretation, and static reservoir modeling to accurately characterize hydrocarbon reservoirs.
- Perform volumetric reserve estimations and apply uncertainty analysis to determine recoverable hydrocarbon volumes.
- Develop comprehensive subsurface development plans, including well placement optimization and enhanced oil recovery (EOR) methods.
- Combine geological insights with engineering data to build robust static and dynamic reservoir models using deterministic and stochastic approaches.
- Analyze project economics, including CAPEX and OPEX, and evaluate the financial performance indicators to inform decision-making under uncertainty.
- Identify and mitigate subsurface uncertainties through sensitivity analysis, risk management, and scenario planning.
- Apply optimized drilling techniques, including horizontal and directional drilling, to enhance hydrocarbon recovery and manage reservoir drive mechanisms.

Course overview — continued

- Develop strategies for secondary and tertiary field development, including the rejuvenation of old marginal fields using modern technologies like hydraulic fracturing and horizontal drilling.

Programme instructor

MH

M'hamed Horimek

Dedicated Petroleum Reservoir Engineer with over 16 years of experience at SONATRACH, specializing in well and reservoir management, production optimization, and performance enhancement of the Hassi Messaoud oil field. Skilled in analyzing geological, petrophysical, and production data to diagnose well issues, select candidates for remedial actions, and recommend solutions to maximize recovery.
Proficient in reservoir and production engineering tools including PROSPER, MBAL, SAFIR, OFM/DSS, and Petroleum Experts Suite, with expertise in nodal analysis, material balance calculations, well modeling, and production forecasting.
Experienced in multidisciplinary and international collaborations with geologists, petrophysicists, production technologists, and fracture design experts, with proven success in optimizing production, managing shut-in wells, and evaluating interventions such as acidizing, fracturing, and artificial lift design. Adept at preparing and delivering technical reports, field performance updates, and integrated production models.
Professional Instructor at the Algerian Petroleum Institute (API), delivering training to newly recruited engineers and technicians in Fundamentals of Reservoir Engineering, Petroleum Geology, and Well Test Operations and Interpretation.

Participant ratings

Programme evaluation based on participant feedback

Overall programme rating — 2.8 / 5

Clarity of learning objectives	**2.6 / 5**
Confidence in applying knowledge and skills	**2.5 / 5**
Achievement of learning objectives	**2.4 / 5**
Relevance of content to job tasks	**2.7 / 5**
Suitability of difficulty for the level of preparation	**2.7 / 5**
Increase in knowledge	**2.5 / 5**
Skills development	**2.6 / 5**
Willingness to recommend the programme to colleagues	**2.6 / 5**

20 responses

Joining the programme

Contact the Academy and quote course code 000703 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
www.tecedu.academy

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