



aeon*X*

Specialist Knowledge | Extraordinary Results

Training Programmes (Geoscience Courses)

2026

AeonX E&P Learning

AeonX technical staff and global partners are seasoned E&P professionals with extensive international experience. We enjoy sharing our technical expertise and practical knowledge of the E&P industry with colleagues while ensuring high standards and quality of technical work. This makes us excellent teaching experts with a goal to always provide value.

We provide technical training and competency development in various disciplines within the oil and gas industry with more focus on practice alongside the theory. Our training course courses include a wide range of subsurface and surface engineering courses which cover drilling and completions, reservoir engineering, production technology, reservoir and production management, PVT analyses, Petrophysics, Geology and geophysics, Production operations, Planning and scheduling, Petroleum economics, Green and Brown field development, Management, Operation and leadership courses etc.

Our courses range from standard five-day courses for fundamentals up to advanced and mastery level courses such as 6-week "Field development planning" course aimed at EP staff with several years of experience.

In house competencies can also be enhanced through structured internal training courses and cross functional workshops suited to your company using experienced facilitators. We review each organisation's competency development goals and focus areas and develop bespoke courses to improve capabilities.

Our training courses and workshops are provided over **5 days** unless indicated and can be delivered locally or internationally – UK, USA, UAE, Spain, Netherlands, Italy, France, Singapore, Thailand etc.

Training Course Overview

Our Geoscience courses were designed to cover all levels of knowledge and understanding of the field of study. It provides courses from foundation knowledge in areas like Reservoir Characterization, Borehole interpretation to Advanced knowledge in Wellsite Geology, Seismic Interpretation, and Geophysics

FUNDAMENTAL COURSES

1 Fundamentals of Seismic Interpretation

The basic principles of reading and analyzing seismic data to understand subsurface geology are what make up the fundamentals of seismic interpretation. This course will introduce participants to how seismic surveys are acquired, how to identify horizons, faults, and structural traps, and how to integrate seismic information with well data to support hydrocarbon exploration, prospect mapping, and field development decisions.

Some of the topics to be covered in this includes;

- Basics of seismic data acquisition (2D vs 3D surveys)
- Seismic reflection principles and wave propagation
- Seismic data processing overview
- Seismic sections: time vs depth concepts
- Identifying horizons and seismic reflectors
- Fault recognition and mapping
- Structural interpretation (anticlines, synclines, traps)
- Stratigraphic interpretation basics

2 Quantitative Reservoir Characterization

This course provides data-driven methods for evaluating reservoir properties such as porosity, saturation, and lithology. Participants learn how seismic, well log, and petrophysical data

are integrated and analyzed quantitatively to predict reservoir quality, reduce uncertainty, and support exploration and development decisions.

Topics covered in this course includes;

- Overview of reservoir characterization workflow
- Rock physics fundamentals
- Well log analysis and petrophysical parameters
- Seismic attributes and attribute analysis
- Seismic inversion basics (acoustic/elastic)
- Lithology and fluid prediction concepts
- AVO fundamentals for reservoir properties
- Calibration of seismic with well data

3 Petroleum Systems Analysis and Modeling

The main components and mechanisms that regulate hydrocarbon production, movement, accumulation, and preservation are covered in this course. Participants learn how geological, geochemical, and basin modeling data are integrated to evaluate prospectivity, timing of charge, and exploration risk.

Some of the topics to be covered in this course includes;

- Elements of a petroleum system (source, reservoir, seal, trap)
- Petroleum system processes (generation, migration, accumulation)
- Source rock evaluation and geochemical data basics
- Burial history and thermal maturity modeling
- Basin modeling fundamentals (1D, 2D, 3D concepts)
- Timing of hydrocarbon generation and trap formation
- Migration pathways and charge risk analysis
- Play fairway analysis

4 Structural Geology and Geomechanics

This course introduces participants to how rock deformation, stress, and faulting influence reservoir geometry, seal integrity, and drilling performance. Participants learn to interpret structural features and evaluate in-situ stresses to support exploration, field development, and well planning.

Some topics to be covered include the following;

- Stress and strain fundamentals
- Rock deformation and mechanical behavior
- Faults, folds, and fracture systems
- Structural styles in sedimentary basins
- Fault seal analysis concepts
- Fracture characterization and impact on reservoirs
- In-situ stress determination methods

5 Basics of Borehole Image and Interpretation

Professionals are introduced to recognising subsurface structures, fractures, and depositional features using borehole imaging logs in this course. Participants learn how borehole images are acquired and interpreted to support reservoir characterization, structural analysis, and well planning.

Some topics to be covered include the following;

- Overview of borehole imaging tools (FMI, UBI, etc.)
- Borehole image acquisition principles
- Image log types (resistivity vs acoustic)
- Borehole image quality control
- Identification of bedding and dip interpretation
- Fracture and fault recognition
- Natural vs induced fractures
- Breakouts and drilling-induced features
- Structural dip and azimuth analysis

ADVANCED COURSES

1 Advanced Petrophysics

Our **Advanced Petrophysics** course equips professionals with in-depth techniques for evaluating complex reservoirs using integrated well log, core, and fluid data. The course focuses on improving accuracy in estimating reservoir properties and handling challenging conditions such as shaly sands, carbonates, and unconventional plays.

Some of the topics to be covered include the following;

- Advanced well log interpretation techniques
- Shaly sand evaluation models (e.g., Waxman-Smiths, Dual Water)
- Carbonate reservoir characterization
- Formation evaluation in complex lithologies
- Capillary pressure and saturation-height modeling
- NMR log interpretation
- Advanced resistivity and dielectric logs

2 Advanced Seismic Data Acquisition and Processing

Designed to equip professionals with deeper knowledge of how high-quality seismic data is acquired, processed, and optimized for accurate subsurface imaging. The course focuses on improving data quality, resolving complex geology, and preparing datasets for advanced interpretation.

Some of the topics to be covered include the following;

- Advanced survey design (2D, 3D, 4D/4C seismic)
- Seismic sources and receiver technologies
- Noise attenuation and signal enhancement techniques
- Static corrections and near-surface modeling
- Velocity analysis and model building
- Multiple attenuation methods (SRME, Radoadon, etc.)
- Migration techniques (Kirchhoff, RTM)

3 Advanced Seismic Interpretation

This builds on fundamental skills of Seismic Interpretation to help professionals extract deeper geological and reservoir insights from seismic data. The course focuses on integrating seismic attributes, quantitative interpretation, and advanced techniques to resolve complex structures, stratigraphy, and reservoir properties.

Some topics covered in this course includes;

- Advanced structural interpretation in complex settings (fault networks, salt tectonics)
- Seismic stratigraphy and sequence stratigraphy
- Seismic attribute analysis (coherence, curvature, spectral decomposition)
- Quantitative interpretation (QI) workflows
- AVO/AVA analysis and fluid prediction
- Seismic inversion (acoustic and elastic) for reservoir properties
- Identification of subtle traps and stratigraphic features

4 Advanced Reservoir Geophysics

Focused on the characterisation of reservoir attributes, track changes over time, and assist field development and production optimisation, this course equips participants with the skills on using seismic and quantitative methodologies to achieve this. It places a strong emphasis on combining geophysics, geology, and engineering to increase reservoir knowledge and lower uncertainty.

Some of the topics covered in this course includes;

- Rock physics modeling for reservoir properties
- Seismic inversion (acoustic, elastic, and pre-stack)
- AVO/AVA analysis for lithology and fluid prediction
- Seismic attributes for reservoir characterization
- Time-lapse (4D) seismic monitoring
- Integration of seismic with well and production data

5 Wellsite Geology and Operations

Participants are equipped with the skills to make real-time geological and operational decisions during drilling. The course focuses on integrating geological data with drilling activities to optimize well placement, ensure safety, and maximize reservoir contact.

It focuses on topics such as;

- Roles and responsibilities of the wellsite geologist
- Advanced mud logging and sample analysis
- Formation evaluation while drilling (LWD/MWD integration)
- Real-time data interpretation and decision-making
- Well correlation and geosteering techniques
- Pore pressure prediction and monitoring