

Training Program

Fundamentals of Petroleum Geology for Non Geologists



Introduction:

This introductory course is designed for industry professionals with no prior geological training. Registrants will gain an understanding of fundamental geological principles and the tools and techniques used in petroleum exploration. An emphasis in the course is to provide the background and terminology required to communicate more effectively with geoscientists. The course introduces the various tools of the trade and explains their use. Examples are provided from a world-wide selection of important oil fields and major plays in the locale where the course is taught. The course will cover fundamentals of geological principles employed to find, develop and produce oil and gas reservoirs, the type of data required to build a model of the subsurface, and the different methods used to display information. Furthermore, this course will demystify the language used by geoscientists and help participants understand the relevance of petroleum geology within the overall framework of the upstream oil and gas industry.

The course will feature:

- Origin, nature, and occurrence of petroleum
- Identifying and classifying rocks - source rocks, reservoir rocks, and seals
- Sedimentology and stratigraphy
- Depositional environments and their significance to reservoir rock prediction
- Geologic time and dating geologic events
- Structural geology - folding and faulting
- Formation of petroleum traps
- Surface and subsurface mapping methods
- Reconstructing geologic events through field work, maps, and cross sections
- Exploration methods - generating and evaluating prospects
- Working with logs
- Sources of data
- Oil shows at the wellsite
- Formation evaluation

Who Should Attend?

Petroleum Engineers, Technical & Reservoir Engineers, Drilling Engineers, Processing Engineers, Commercial Analysts, Decision Makers, Investors in oil and gas sector

Course Objectives:

By the end of this course, delegates will be able to:

- Recognize the components of the structure of the Earth
- Identify the main rock types, their origins and their roles in petroleum generation and entrapment
- Understand how drilling, completing and reworking a well affects its ability to produce
- Understand what can be done within open-hole and cased wells, as a part of reservoir management
- Understand how drilling practices can damage or stimulate producing wells

Course Outline:

- Overall drilling practices
- Language of drilling
- Reservoir rock and fluid properties
- Rigs & rig equipment
- Drilling string components & design
- Bits
- Fluids & hydraulics
- Rig operation
- MWD
- Well control
- Hole problems & stuck pipe
- Drilling risks
- Cores and coring

- Casing design & installation
- Primary cementing
- Directional, horizontal, multilateral & under-balanced drilling
- Wellhead & trees
- Zonal isolation
- Tubing, packers & completion equipment
- Safety & flow control devices
- Open hole completions
- Basic completion types
- Perforating
- Open & cased hole logging
- Formation damage & treatment
- Completion fluids
- Multiple completions
- Stimulation application: surfactants, solvents, acidizing, fracturing & deep perforating
- Formation & sand control: screens, chemical consolidation, gravel packing, frac-pack, new & novel techniques
- Scale & corrosion
- Paraffin & asphaltenes
- Recompletions
- Reworks
- Sidetracking
- Deepening
- Coiled tubing