



HARNESS THE POWER
OF KNOWLEDGE

Understanding Petroleum Geology

TRAIN



Introduction

Petroleum geology, the study of the origin, formation, and distribution of hydrocarbons, is a critical field in the oil and gas industry

It plays a vital role in exploration, development, and production of petroleum resources

This comprehensive 5-day professional training course will equip you with the essential knowledge and skills to effectively apply petroleum geology principles to various aspects of the petroleum industry

Course Objectives

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

- Understand the fundamental principles of petroleum geology and its significance in the oil and gas industry
- Identify and classify different types of hydrocarbon deposits, including conventional, unconventional, and offshore reservoirs
- Explore the processes of hydrocarbon generation, migration, and entrapment
- Utilize geological data, such as seismic data, well logs, and core samples, to interpret subsurface geology and identify potential hydrocarbon reservoirs
- Apply petroleum geology knowledge to guide exploration strategies, well placement, and reservoir management

Course Agenda

Day 1: Introduction to Petroleum Geology and Hydrocarbon Resources

- Delve into the history, principles, and applications of petroleum geology in the oil and gas industry
- Understand the origin, formation, and classification of hydrocarbons
- Explore the different types of hydrocarbon deposits, including conventional, unconventional, and offshore reservoirs
- Discuss the global distribution of hydrocarbon resources and their economic importance

Day 2: Geological Framework and Sedimentary Processes

- Understand the geological framework of sedimentary basins, the primary environments for hydrocarbon accumulation
- Explore the processes of sedimentation, including erosion, transportation, and deposition, and their impact on reservoir formation
- Identify and classify different types of sedimentary rocks, their characteristics, and their potential for hydrocarbon storage
- Discuss the role of diagenesis, the alteration of sediments into rocks, in hydrocarbon reservoir quality

Day 3: Hydrocarbon Generation, Migration, and Entrapment

- Delve into the processes of hydrocarbon generation from organic matter, including kerogen maturation and thermal cracking
- Understand the mechanisms of hydrocarbon migration through permeable pathways in sedimentary rocks
- Explore the various types of hydrocarbon traps, the geological structures that confine and accumulate hydrocarbons
- Discuss factors that influence hydrocarbon distribution and reservoir potential

Day 4: Subsurface Exploration and Geological Interpretation

- Understand the principles of seismic exploration and its application in subsurface mapping
- Utilize seismic data to identify geological structures, faults, and potential hydrocarbon reservoirs
- Interpret well logs, including gamma ray, resistivity, and sonic logs, to characterize subsurface formations and identify reservoir properties
- Integrate geological data from seismic, well logs, and core samples to construct geological models and assess reservoir potential

Day 5: Application of Petroleum Geology in Exploration, Development, and Production

- Discuss the application of petroleum geology in exploration strategies, including identifying prospective

areas and selecting drilling locations

- Explore the role of petroleum geology in well placement, reservoir characterization, and reservoir management
- Understand the impact of petroleum geology on production optimization and enhanced oil recovery techniques
- Discuss the environmental considerations and sustainability aspects of petroleum exploration and production

Who Should Attend

This course is designed for:

- Aspiring and experienced geologists seeking to enhance their understanding of petroleum geology and its applications
- Reservoir engineers involved in reservoir modeling, well placement, and production optimization
- Petroleum professionals working in exploration, development, and production of hydrocarbon resources
- Geophysicists utilizing seismic data and well log interpretation for subsurface mapping and reservoir evaluation
- Environmental scientists and regulators involved in assessing the environmental impacts of petroleum activities

Course Benefits

- Develop a comprehensive understanding of petroleum geology principles, processes, and applications in the oil and gas industry
- Gain hands-on experience in interpreting geological data, including seismic data, well logs, and core samples
- Enhance your ability to apply petroleum geology knowledge to guide exploration strategies, well placement, and reservoir management
- Stay updated on the latest advancements and techniques in petroleum geology research and industry practices
- Network with industry professionals and gain valuable insights into the oil and gas industry