



Basic Open Hole Tools

Course Introduction:

Open hole logging is a critical component of formation evaluation in the oil and gas industry, providing valuable subsurface data for reservoir characterization and decision-making. This training course focuses on the fundamental principles and applications of **Basic Open Hole Tools**, covering key logging measurements such as resistivity, porosity, density, and sonic logging. By understanding how these tools operate and interpret their data, professionals can improve hydrocarbon identification and optimize well planning.

This 5-day theoretical training program will provide participants with in-depth knowledge of basic open hole tools, their measurement principles, and their applications in formation evaluation. Through interactive lectures and industry case studies, attendees will learn how to analyze logging data, understand tool limitations, and apply best practices for accurate subsurface assessments. By the end of the course, participants will be well-equipped to interpret open hole logging results effectively for reservoir evaluation and well completion strategies.

Course Objectives:

Upon completion of this course, participants will:

- Understand the fundamentals of open hole logging and its role in formation evaluation.
- Learn the operating principles and applications of basic open hole logging tools.
- Gain knowledge of resistivity, porosity, density, and sonic logging techniques.
- Identify key logging measurements and their significance in hydrocarbon detection.
- Recognize environmental factors and tool limitations that affect log quality.
- Develop skills in interpreting and integrating log data for reservoir analysis.
- Explore industry best practices and case studies for effective log interpretation.

Who Should Attend?

This course is designed for professionals involved in Petrophysics and formation evaluation, Wellsite geology and subsurface studies, Drilling and reservoir engineering, Logging and data interpretation, Exploration and production operations, and Oilfield service providers and technical support teams.

Course Outline:

Day 1: Introduction to Open Hole Logging

- Overview of wireline logging and its role in formation evaluation
- Classification of logging tools: open hole vs. cased hole logging
- Basic physics of rock properties and fluid behavior in formations
- Introduction to borehole environment and logging conditions

Day 2: Resistivity Logging Tools and Applications

- Principles of resistivity measurements in open hole logging
- Types of resistivity tools: induction and laterolog tools
- Identifying hydrocarbon-bearing formations using resistivity logs
- Factors affecting resistivity readings and common interpretation challenges

Day 3: Porosity and Density Logging Techniques

- Introduction to porosity logging and its significance
- Density logging principles and applications
- Neutron porosity logging and tool responses in different lithologies
- Cross-plot analysis and integration of porosity-density data

Day 4: Sonic Logging and Formation Evaluation

- Fundamentals of sonic logging and wave propagation
- Compressional and shear wave measurements
- Applications of sonic logs in formation porosity and mechanical properties
- Acoustic log quality control and interpretation techniques

Day 5: Data Integration, Log Interpretation, and Industry Best Practices

- Integrating resistivity, porosity, density, and sonic logs for reservoir evaluation
- Identifying formation fluids and lithology classification using logs
- Log analysis in hydrocarbon exploration
- Industry best practices and challenges in open hole logging

Course Methodology:

A variety of methodologies will be used during the course that including:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play

- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course location. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session