



TRAINING PROGRAM



# Instrumental Analysis Techniques In Petroleum Industry

## Introduction:

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The efficient use of the advance analytical methods and modern analytical instruments are very imperative tools to solve any laboratory problem. The course provides the basic and advance of analytical analysis methods of most used instruments. In addition, it provides elegant tools for obtaining qualitative and quantitative data techniques with practice work on analysis software.

## Who Should Attend?

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Lab Managers and Supervisors, Chemists and Technicians, Health & Safety and Environmental Professionals, staff responsible for managing hazardous wastes, staff responsible for contamination issues, Laboratory Technicians, Analytical Laboratory Professionals, Laboratory Staff, Superintendents, Supervisors, Engineers, Chemists and Analysts, anyone working in any analytical laboratory, Chemical Engineers, Instrument Engineers and Supervisors who work in laboratory

## Course Objectives:

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

- Have a deeper understanding of the principles and practices of the modern instruments technique

## Course Outline:

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### Laboratory Analytical Instrumentation

- Spectrometric Instruments
- Molecular Spectrometry
- Ultraviolet, Visible and Near Infrared
- Infrared and Raman
- Luminescence
- Nuclear Magnetic Resonance
- Mass Spectrometry
- Atomic Spectrometry
- Atomic Absorption and Atomic Fluorescence Spectrometry
- Flam photometer Spectrometry
- Inductively Coupled Plasma–Optical Emission Spectrometry
- Inductively Coupled Plasma–Mass Spectrometry
- X-ray (Fluorescence– Diffraction)
- Separation Instruments
- Gas Chromatography
- High Performance Liquid Chromatography
- Ion Chromatography
- Electrochemical Instruments
- Potentiometry
- Voltammetry
- Amperometry
- Conductimetry
- Other Instruments

### Portable Analytical Instrumentation

- Portable Instruments in the Laboratory
- Spectrometric Instruments
- Separation Instruments
- Electrochemical Instruments
- Portable Instruments in Various Applications
- Environmental Applications
- Water Quality Monitoring
- Soil and Sediment Testing
- Air Monitoring
- Other Applications

### **Process Analytical Instrumentation**

- In-Process Sampling
- In-Process Analysis
- Flow Injection Analysis
- Spectroscopic Analysis
- Separation Analysis
- Imaging Analysis
- Electrochemical Analysis