

## **(8) Gas Chromatography & HPLC**

### **WHO SHOULD ATTEND**

This short course is intended for engineers, technicians and analytical chemists. It is best suited to those wishing to follow up with vendor training on a specific process chromatograph.

### **COURSE OBJECTIVES**

Where gas chromatography is unable to separate a sample, HPLC steps in. High performance liquid chromatography (HPLC) is the most powerful of all the chromatographic techniques. It can often easily achieve separations and analyses that would be difficult or impossible using other forms of chromatography. To avoid the pitfalls of HPLC the analytical chemist must have the sort of experience that is difficult to obtain by reading textbooks. This course attempts to provide the experiential side of the topic, it also gives the theoretical side in a well-balanced manner.

The delegate will gain an understanding of and an ability to describe the following:

- GC hardware
- GC columns and separation technology
- The mobile phase gases
- Sample delivery systems for a process GC
- The injector
- The column oven
- The detector
- The data and presentation system
- The HPLC column
- HPLC pumps
- HPLC data presentation system
- Differences between laboratory and process instruments.
- Troubleshooting both GC and HPLC

### **CONTENT**

- The Fundamental Chromatograph
- Packed Column Systems
- Capillary Column Systems
- Injection Systems for High Resolution Gas Chromatography
- Detectors
- Data Handling Systems & Quantitative Analysis
- Qualitative Analysis
- High Performance Liquid Chromatography (HPLC)
- Retention and Peak Dispersion
- Solvent Delivery and Sample & Sample Injection
- Columns
- Detectors
- The Mobile Phase
- Column Packings and Modes of HPLC