



AL137: Laboratory Management System



Training Description:

The quality management of the laboratory according to an international standard is very important to enhance the laboratory system and laboratory environment. Laboratories use ISO 17025 to implement a quality system aimed at improving their ability to consistently produce valid results. A careful analysis of tasks and working with safety conditions will lead to redesign of the working environment that will enhance worker performance. This intensive course provides advance knowledge and standard operation, calibration and troubleshooting of gas chromatography according to the ISO 17025 guideline.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Understand the laboratory quality requirements and appreciate the need for a quality system according to the International Standards Organization ISO 17025
- ✓ Understand the significance of calibration methods and traceability
- ✓ Identify the factors which have to be considered when choosing a GC method
- ✓ Understand how to validate analytical methods of gas chromatography
- ✓ Recognize the characteristics of a laboratory environment which can affect the performance of gas chromatography and hence influence the validity of measurements
- ✓ Use the standard methods for the gas chromatography operation, calculation and analyses report
- ✓ Use a standard method for gas chromatography troubleshooting
- ✓ Use a standard safety work in the laboratory

Training Designed for:

This course is intended for people who implement, maintain and review laboratory quality systems. It is suitable for all laboratory staff including Managers, Quality Assurance Officers, Lab Technicians, Chemists, Chemical Engineers, and Instrument Engineers.

Training Program:

DAY ONE:

- ❖ PRE-TEST
- ❖ Laboratory Quality Management Manual Iso 17025
 - Management Requirements
 - Technical Requirements
- ❖ Validation Of Analytical Methods And Procedures
- ❖ Sampling
 - Sampling Plan
 - Quality of Sample
 - Adequacy of Samples for Analysis Requested

DAY TWO:

- ❖ Quality In The Analytical Chemistry Laboratory
 - Introduction to Quality Assurance Selecting of the Method Selecting Equipment and Consumables
 - Making Measurements and Reporting Quality Systems in Chemical Laboratories





DAY THREE:

- ❖ Gas Chromatography Techniques and Operation
 - Carrier
 - Gas Selection Regulator
 - Selection Sample Introduction Components
 - Selection of the Column Selection of the Detectors
- ❖ Gas Chromatography Theory Parameters
 - Theoretical Plate Retention Time
 - Average Linear
 - Rate Partition
 - Ratio Capacity
 - Factor Selectivity
 - Factor Column Efficiency
 - Column Resolution
- ❖ GC Standard Analysis Procedure and Report ISO/IEC 17025

DAY FOUR:

- ❖ Quantitative Method
 - Calibration Using External and Internal Standards
 - Instrumental Graph-Interpolated Method
 - Product-Moment Correlation Coefficient
 - Determination of Analyte Concentration
 - Standard Addition-Extrapolated
 - Method Detection Limit
 - Confidence Limit
 - Outliers Test Experimental Design and Optimization
- ❖ Standard Methods For Troubleshooting
 - Band Broadening Baseline Deviation
 - Peak Shape Problems
 - Split Peaks
 - Negative Peaks
 - Retention Changes
 - Peak Size Problems

DAY FIVE:

- ❖ Safe Work Practices And Procedures
- ❖ Course Conclusion
- ❖ POST-TEST and EVALUATION

Training Requirements:

“Hands-on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”

Please note that the above topics can be amended as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.





Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:

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Training & Career Development Department

