



AL045: Laboratory Information Management System (LIMS) Technical Training

Training Description:

A **Laboratory Information Management System (LIMS)** is computer software that is used in the laboratory for the management of samples, laboratory users, instruments, standards and other laboratory functions such as invoicing, and work flow automation. LIMS is designed for a wide variety of laboratory environments operating in many scientific and industrial disciplines.

Application of modern technology techniques inside laboratory is one most important modern ways of progress. Facilitating everything inside laboratory starting from samples receiving and handling, completing the analysis procedures, reporting the final analysis results, retrieving the old stored data results, auditing inventory of materials, is now can be handled easily by application and implementation of some kinds of software named as **“Laboratory Information Management Systems” (LIMS)**. Using the Implementation of such systems can easily facilitate and control all procedures inside laboratory starting from sampling plan until final analysis reporting. Also, authorization of data available inside laboratory can be easily controlled through access control for every person inside laboratory.

This course will illustrate the ISO17025 requirements for testing laboratories, relevant to the operation of their management system, technical competency, validity of analytical results, and the use of Laboratory Information Management Systems (LIMS) as a tool in satisfying the above. In particular, the importance of LIMS implementation in meeting the traceability requirements of ISO 17025 will be addressed.

The course will also demonstrate the compliance of ISO 17025 with those ISO 9001 and GLP (Good Laboratory Practice) requirements that are relevant to the scope of testing services. In addition, Management and Technical personnel of analytical laboratories will recognize the dire need of implementation of the Standard within their Organization in order to satisfy the needs of their customers and general market needs (e.g. Regulatory Authorities and organizations providing recognition).

This training course will highlight:

- Management requirements of ISO 17025 Quality manual, Document control, Tenders, Suppliers, Service to the customer, Internal audits
- Technical requirements of ISO 17025 Personnel, Equipment, Traceability, Reference standards, Sampling, Quality assurance of results, Test Certificates, O & I's
- Definition of Laboratory accreditation: Accreditation Bodies (AB's) and Multilateral Agreements (MLA, MRA, ILAC) on cross frontier recognition of accreditation
- Basic guidelines on the design of a LIMS
- Implementation of a LIMS, in the context of ISO 17025

Training Objectives:

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

- ✓ Practice the Laboratory Information Management System (LIMS)
- ✓ Understand and implement Good Laboratory Practice (GLP) in their organizations
- ✓ Comprehend the importance of assuring quality of test and calibration results
- ✓ Apply traceability from sample receipt and analysis scheduling until delivery of results, through the implementation of LIMS
- ✓ Design LIMS on the basis of ISO 17025 requirements
- ✓ Realize the need for continuous review and improvement of LIMS systems, based on market and regulatory requirements

Training Requirement:

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

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Designed for:

This training course is intended for those professionals involved in Quality Assurance (QA) in analytical laboratories, but will greatly benefit:

- Management and technical personnel of analytical laboratories, in a wide spectrum of activities (e.g. oil refinery, food and utility industries including potable and wastewater treatment plants, and commercial analytical laboratories)
- Technicians, Specialists and other personnel involved in laboratories
- Those laboratories that are in the process of obtaining ISO 17025 accreditation and those planning to implement a LIMS
- Newly recruited laboratory scientific personnel
- Laboratory accreditation consultants

Training Program:

FIVE DAYS:

- ❖ **LABORATORY**
 - Organization Chart - Responsibilities
 - Role of Laboratory’s Person
 - Chemical Handling and Classification
 - Chemical Reactions
 - Reaction Types
 - Poisons and Carcinogens
 - Handling Toxic Substance
 - Spillages Inside Laboratory
- ❖ **DETERMINATION OF COURSE GOALS & INTRODUCTION TO ISO 17025 REQUIREMENTS**
 - ISO 17025 contents
 - Introduction to Information Systems
 - Introduction to control of documents & records – Use of LIMS for managing records
 - Starting LIMS, Users, Roles
 - Suppliers/Subcontractors – Detailed record keeping through LIMS
 - LIMS design – Basic considerations
- ❖ **SERVICE TO THE CUSTOMER & INTERNAL AUDITS AS A TOOL FOR QUALITY ASSURANCE**
 - Service to the customer - Complaints
 - Control of non-conforming work/testing
 - Corrective/Preventive actions – Implementation & Monitoring of corrective actions
 - Control of records

- Internal auditing as a tool for addressing complaints & implementing a proactive strategy
- Management review
- ❖ **TECHNICAL REQUIREMENTS – PERSONNEL AND TEST METHOD DEVELOPMENT**
 - Technical records – LIMS as a unique traceability tool
 - Personnel (scientific, technical, administrative)
 - Accommodation & Environmental conditions
 - Test methods & Method validation. Estimation of uncertainty of measurement
 - Test plans
 - Selection of methods – Laboratory-developed methods, Non-standard methods
 - Data Entry, Control of data for all of above topics – Use of LIMS as a data recording tool
- ❖ **TECHNICAL REQUIREMENTS – EQUIPMENT AND QUALITY ASSURANCE**
 - Measurement traceability through LIMS
 - Equipment – Measurement traceability, Reference standards & Reference materials
 - Sampling – Handling of test items & The role of LIMS as the first link in the sample traceability chain (from sample login to issue of Test Certificate)
 - Sample group
 - In-house testing & subcontracted analysis. Issuing of relevant working forms using the LIMS
 - Materials, Inventory, Storage locations, Tests, Result Entry
 - Quality Assurance (QA) of test results & Ways of reporting the test results – The LIMS contribution to assuring traceability of QA and Analytical data
- ❖ **TECHNICAL REQUIREMENTS – TEST REPORTS, IMPLEMENTATION OF LIMS & ACCREDITATION REQUIREMENTS**
 - Format of Test Certificates & Amendments of Test Certificates – Use of LIMS for issuing Test Certificates and keeping track of changes
 - Opinions & Interpretations (O&I's) on Test Certificates
 - Electronic transmission of results – LIMS contribution to assist in speedy, targeted and foolproof delivery of results
 - Preparation & Application for accreditation
 - Role playing – Internal/External audits exercise
- ❖ Course Conclusion
- ❖ POST-ASSESSMENT and EVALUATION

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, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

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

Training Fees:

TBA 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 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

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

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