Laboratory Quality Management Systems (LQMS) Training Course

Professional Development Training Course Outline

Category	General Training	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today's highly regulated healthcare, pharmaceutical, biotechnology, environmental, food safety, and research sectors, implementing a robust Laboratory Quality Management System (LQMS) is essential for ensuring accuracy, reliability, compliance, traceability, and continual improvement. Organizations are increasingly adopting international standards such as ISO 15189, ISO/IEC 17025, Good Laboratory Practice (GLP), CAP Accreditation, Risk-Based Thinking, Digital Quality Management, and Data Integrity Frameworks to enhance laboratory performance and maintain stakeholder confidence. Effective quality management reduces errors, improves turnaround times, strengthens customer satisfaction, and supports evidence-based decision-making.

Laboratory Quality Management Systems (LQMS) Training Course equips laboratory professionals with practical skills and advanced knowledge to establish, implement, monitor, audit, and continually improve laboratory quality systems. Participants will learn best practices in quality assurance, quality control, laboratory accreditation, root cause analysis, risk management, competency assessment, corrective and preventive actions (CAPA), laboratory digital transformation, and regulatory compliance. Through real-world case studies and hands-on exercises, attendees will gain the competencies needed to drive operational excellence and achieve international laboratory standards.

Programme Curriculum

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Course Duration

5 days

Course Objectives

Upon completion of this course, participants will be able to:

1. Understand the principles of Laboratory Quality Management Systems (LQMS).
2. Interpret requirements of ISO 15189 and ISO/IEC 17025 standards.
3. Implement effective Quality Assurance (QA) and Quality Control (QC) programs.
4. Apply Risk-Based Thinking for laboratory process improvement.
5. Develop and manage laboratory documentation and SOP systems.
6. Strengthen Data Integrity and Digital Quality Management practices.
7. Conduct internal quality audits using modern auditing techniques.
8. Perform Root Cause Analysis (RCA) and implement CAPA programs.
9. Establish laboratory performance indicators and quality metrics.
10. Enhance laboratory accreditation readiness and compliance management.
11. Improve sample management, traceability, and chain-of-custody processes.
12. Integrate continuous improvement methodologies such as Lean Laboratory Management and Six Sigma.
13. Build a culture of quality, patient safety, and operational excellence.

Target Audience

1. Laboratory Managers and Supervisors
2. Quality Assurance Officers
3. Medical Laboratory Scientists
4. Laboratory Technologists and Technicians
5. Quality Control Personnel
6. Research Scientists and Analysts
7. Accreditation and Compliance Officers
8. Healthcare, Pharmaceutical, Food Safety, Environmental, and Biotechnology Professionals

Course Modules

Module 1: Foundations of Laboratory Quality Management Systems

- Principles of Quality Management Systems
- Quality Standards and Regulatory Requirements

- Quality Policy and Quality Objectives
- Laboratory Organizational Structure
- Quality Culture and Leadership
- **Case Study:** Implementing an ISO-based quality system in a regional diagnostic laboratory.

Module 2: ISO 15189, ISO/IEC 17025 and Accreditation Requirements

- Overview of ISO 15189 Requirements
- ISO/IEC 17025 Compliance Framework
- Accreditation Processes and Readiness
- Gap Analysis Techniques
- Regulatory and Legal Considerations
- **Case Study:** Laboratory accreditation journey and lessons learned.

Module 3: Quality Assurance and Quality Control

- Internal Quality Control Systems
- External Quality Assessment Programs
- Method Validation and Verification
- Measurement Uncertainty
- Performance Monitoring and Benchmarking
- **Case Study:** Reducing analytical errors through strengthened QC processes.

Module 4: Laboratory Documentation and Data Integrity

- Standard Operating Procedures (SOPs)
- Document Control Systems
- Record Management and Traceability
- Electronic Laboratory Information Systems (LIMS)
- ALCOA+ Data Integrity Principles
- **Case Study:** Transitioning from paper-based records to digital quality systems.

Module 5: Risk Management and Continuous Improvement

- Risk Assessment Methodologies
- Risk Registers and Mitigation Plans
- Lean Laboratory Management
- Six Sigma Quality Improvement
- Continuous Improvement Frameworks
- **Case Study:** Applying Lean principles to reduce sample turnaround times.

Module 6: Internal Auditing and CAPA Management

- Audit Planning and Execution
- Audit Reporting Techniques
- Root Cause Analysis Tools
- Corrective and Preventive Actions (CAPA)
- Follow-up and Effectiveness Evaluation
- **Case Study:** Managing recurring non-conformities through CAPA implementation.

Module 7: Competency Assessment and Quality Leadership

- Staff Competency Management
- Training and Development Programs
- Performance Evaluation Systems
- Leadership in Quality Management
- Change Management Strategies
- **Case Study:** Building a high-performance laboratory quality culture.

Module 8: Laboratory Performance Excellence and Future Trends

- Key Performance Indicators (KPIs)
- Quality Dashboards and Analytics
- Artificial Intelligence in Laboratory Quality
- Digital Transformation and Automation
- Strategic Quality Planning
- **Case Study:** Leveraging digital quality tools to improve laboratory efficiency and compliance.

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

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