



# **Advanced Integrated Medical Laboratory Sciences Training Course**

21 – 25 March 2027  
Muscat

## Advanced Integrated Medical Laboratory Sciences Training Course

**Ref:** 1509\_211465 **Date:** 21 – 25 March 2027 **Location:** Muscat **Fees:** 5700 Euro

### Overview

Advanced Integrated Medical Laboratory Sciences Training Course is a one-week course for laboratory supervisors, biomedical scientists, quality leads, and healthcare professionals, who leave with a Cross-Discipline Laboratory Control File. The course connects microbiology, hematology, clinical biochemistry, specimen pathways, analytical quality, result validation, biosafety, nonconforming events, and corrective action. Agile Leaders Training Center presents integrated medical laboratory sciences as a discipline for reliable clinical results.

### Who Should Attend

- Functions responsible for clinical laboratory service coordination
- Teams responsible for microbiology, hematology, or clinical biochemistry testing
- Personnel responsible for specimen quality and result validation
- Leaders responsible for laboratory quality and nonconforming events
- Departments responsible for biosafety, competency, and process improvement

The course assumes participants influence clinical laboratory workflows and leaves out qualification in individual test methods, diagnostic interpretation, and certification preparation.

### Departments and Industries

The course supports departments coordinating testing across hospitals, diagnostic services, public health, research, and blood services.

- Hospital and diagnostic laboratory services
- Microbiology and infection-testing functions
- Hematology and blood-service laboratories
- Clinical biochemistry and metabolic testing units
- Public health and biomedical research laboratories

### Learning Objectives

By the end of this course, participants will be able to:



- Analyze risks across the total testing pathway
- Apply specimen acceptance and traceability controls
- Evaluate analytical quality across three laboratory disciplines
- Use result validation and critical-result workflows
- Diagnose nonconforming events and prioritize corrective action
- Build biosafety and cross-discipline assurance evidence

## **Course Agenda**

### **Day 1: Integrated Laboratory Pathways**

- Total Testing Process and Responsibility Map
- Microbiology, Hematology, and Biochemistry Service Interface Matrix
- Patient, Specimen, and Result Traceability Chain
- Laboratory Quality System Essentials Control Map
- Cross-Discipline Laboratory Governance Charter

### **Day 2: Specimen and Pre-Analytical Control**

- Test Request and Patient Identification Check
- Specimen Collection and Labeling Control Plan
- Transport, Receipt, and Stability Monitoring Log
- Specimen Acceptance and Rejection Decision Tree
- Pre-Analytical Error Investigation Record

### **Day 3: Analytical Quality Across Disciplines**

- Microbiology Culture and Identification Quality-Control Map
- Hematology Analyzer and Blood-Film Review Rules
- Clinical Biochemistry Calibration and Control Review
- Analytical Performance and Trend Monitoring Chart
- Cross-Discipline Equipment and Reagent Control Schedule

### **Day 4: Results, Biosafety, and Improvement**

- Result Technical and Clinical Validation Workflow
- Critical-Result Verification and Communication Record
- WHO Risk-Based Laboratory Biosafety Assessment
- Nonconforming Event and Root-Cause Investigation
- Corrective Action Effectiveness Review Cycle



## **Day 5: Integrated Laboratory Practice**

- Suggested Exercise: Specimen Pathway Control Review
- Suggested Exercise: Cross-Discipline Quality Trend Decision
- Suggested Exercise: Result Validation and Critical Communication
- Suggested Exercise: Biosafety Event and Corrective Action
- Capstone Exercise: Cross-Discipline Laboratory Control File

## **Practical Exercises**

The course uses suggested activities based on fictional hospital, diagnostic, public health, and blood-service scenarios.

- Suggested activity: trace a specimen from request through collection, receipt, analysis, validation, and reporting.
- Suggested activity: compare microbiology, hematology, and biochemistry quality evidence and identify an actionable trend.
- Suggested activity: validate an unusual result and document a critical-result communication decision.
- Suggested activity: investigate a biosafety or quality event and test the effectiveness of corrective action.

## **FAQs**

### **Who suits advanced integrated medical laboratory sciences training, and what does it assume?**

Laboratory supervisors, biomedical scientists, quality leads, and service coordinators suit the training; it assumes responsibility for testing pathways and shared quality controls.

### **How does integrated medical laboratory sciences training differ from a single-discipline technical course?**

Integrated medical laboratory sciences training coordinates specimen, quality, validation, safety, and improvement controls across microbiology, hematology, and clinical biochemistry rather than teaching one examination method.

### **What is the total testing process in medical laboratories?**

The total testing process connects test selection, patient identification, specimen collection, transport, receipt, preparation, analysis, validation, reporting, interpretation support, and improvement evidence.

### **How should laboratories validate clinical results?**

Laboratories should validate results against identification, specimen quality, analytical controls, instrument flags, reference information, prior evidence, plausibility, and critical-result rules before release.



## **How are nonconforming laboratory events controlled?**

Nonconforming events are contained, documented, risk-assessed, investigated for causes, corrected, communicated where necessary, and reviewed for the effectiveness of corrective action.

## **Conclusion**

Participants leave with a Cross-Discipline Laboratory Control File containing specimen, analytical, validation, biosafety, event, and improvement tools. The file creates traceability from a test request to an assured result and corrective action. It helps laboratory teams coordinate reliable evidence across microbiology, hematology, and clinical biochemistry.