Course: Medical Laboratory Practice and Safety Program

Code	City	Hotel	Start	End	Price	Language - Hours
HM-919	Rome (Italy)	Hotel Meeting Room	2026-05-18	2026-05-29	8950 €	En - 50

Introduction:

Laboratory medicine plays a fundamental role in public health. It is essential for diagnosing diseases at both individual and population levels. Laboratory tests also support the detection of environmental toxins such as lead, contributing to preventive health measures.

Medical laboratory technicians are key members of the healthcare team. Their responsibilities include assisting scientists with laboratory investigations, operating and maintaining lab equipment, performing diagnostic tests, and ensuring compliance with health and safety standards.

This advanced course is designed to provide participants with in-depth knowledge and

practical skills required to work effectively in modern medical laboratories. It emphasizes technical competencies, safety protocols, quality assurance, and ethical standards.

General Objective:

To equip participants with comprehensive knowledge and practical expertise to perform efficiently as professional medical laboratory technicians, contributing to accurate diagnostics and improved public health outcomes through safe, ethical, and high-quality laboratory practices.

Specific Objectives:

- Understand the role and responsibilities of a medical laboratory technician.
- Broaden their knowledge of clinical laboratory services and classifications.
- Apply laboratory safety rules, policies, and procedures effectively.
- Handle laboratory instruments and equipment with technical proficiency.
- Perform sterilization and disinfection procedures for tools and workspaces.
- Implement quality assurance processes and recognize sources of error.
- Identify common laboratory hazards and apply first aid and preventive measures.
- Demonstrate professionalism, ethics, and adherence to industry standards.

Target Audience:

- Medical Laboratory Technicians
- Laboratory Technologists
- Science Graduates (Biology, Chemistry, Medical Sciences)
- Healthcare Professionals
- Clinical and Public Health Researchers
- Hospital and Clinic Staff
- Vocational Training Students in Allied Health Fields

- Laboratory Supervisors and Quality Officers
- New Employees in Diagnostic Laboratories
- Technical Assistants in Medical Laboratories

Course Content:

1. Introduction to Medical Laboratory Work

- What is a laboratory
- Who are laboratory technicians
- History and evolution of medical laboratory science
- Classification and structure of medical laboratories
- Major roles of a medical laboratory technologist
- Laboratory rules and regulations
- Importance of standardization in reporting and measurement units
- Professional ethics and code of conduct

2. Laboratory Policies and Operations

- Working hours and emergency lab services
- Scope of tests performed and referral mechanisms
- Specimen collection procedures
- Laboratory workload capacity

3. Solutions Used in Medical Laboratories

- Types and classifications of laboratory solutions
- Standard solutions and their preparation
- Measuring and expressing solution concentrations
- Diluting body fluids and dilution calculations

4. Laboratory Wares and Tools

- Common laboratory glassware
- Types and classification of pipettes
- Flasks and their uses
- Laboratory cuvettes and absorption cells

5. Laboratory Instruments and Measurements

- Overview of laboratory instruments
- Beer’s and Lambert’s Law
- Absorptiometry principles
- pH measurement tools and water purification devices
- Microscope parts and resolving power

6. Sterilization and Disinfection

- Sterilization methods (dry heat, moist heat, steam under pressure)
- Types and uses of autoclaves
- Decontamination of laboratory waste
- Chemical disinfectants and space decontamination

7. Laboratory Accidents and Safety Procedures

- Types of hazards and accidents in laboratories
- Contributing factors to lab incidents
- Emergency response and first aid
- Safe storage and handling of chemicals and reagents

8. Quality Assurance in Laboratory Work

- Importance of quality assurance in medical labs
- Types and causes of laboratory errors

- Quality assurance program steps and documentation
- Key terminology and definitions used in lab practice

10. Sample Handling and Pre-analytical Procedures

- Types of clinical specimens (blood, urine, sputum, etc.)
- Pre-analytical variables affecting test results
- Correct labeling and documentation of samples
- Storage, preservation, and transport of specimens
- Centrifugation techniques and sample separation
- Preventing contamination and ensuring traceability

11. Data Management and Laboratory Information Systems (LIS)

- Importance of accurate data entry and record-keeping
- Overview of Laboratory Information Systems (LIS)
- Entering, retrieving, and managing patient data
- Integration of LIS with diagnostic instruments
- Ensuring data confidentiality and security
- Common reporting formats and interpretation support

The Scandinavian Academy for Training and Development adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training and Development.

Program Timings:

- 9:00 AM to 2:00 PM in Arab cities.
- 10:00 AM to 3:00 PM in European and Asian cities.

The program includes:

- A daily buffet provided during the sessions to ensure participants comfort.