

# MODERN CHEMICAL LABORATORY OPERATIONS, EQUIPMENT, AND SAFETY PRACTICES

*"Enhancing Laboratory Efficiency and Safety in Chemical Operations"*

## Schedule

Date	Venue	Fees (Online)
04 - 05 May 2026	Online	USD 700 per delegate

► Available delivery methods: Face-to-Face & Online Training

## Introduction

Chemical laboratories require a combination of technical expertise, operational efficiency, and strict adherence to safety standards. This course provides participants with a comprehensive understanding of modern chemical laboratory operations, advanced equipment handling, and best practices in laboratory safety. Participants will gain the knowledge necessary to manage laboratory processes effectively while minimizing operational risks.

Through interactive sessions, demonstrations, and practical exercises, the training equips laboratory personnel to operate chemical equipment safely, enforce standard operating procedures (SOPs), and maintain a secure and compliant laboratory environment. Participants will also learn methods to prevent accidents, manage chemical hazards, and enhance laboratory productivity.

## Objectives

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

- Understand modern chemical laboratory operations and workflow optimization
- Safely operate and maintain chemical laboratory equipment
- Implement effective laboratory safety protocols and hazard management
- Develop standard operating procedures (SOPs) and documentation practices
- Identify and mitigate chemical, biological, and physical risks
- Promote a culture of safety and compliance within the laboratory
- Prepare for regulatory inspections and audits

## Why Attend

- Gain in-depth knowledge of modern chemical laboratory operations
- Learn best practices for handling laboratory equipment and chemicals safely
- Understand risk assessment and hazard mitigation in the lab
- Improve laboratory efficiency while maintaining safety compliance
- Enhance preparedness for regulatory inspections and audits

## Target Audience

This program is designed for:

- Laboratory managers and supervisors
- Chemical analysts and technicians
- Health, safety, and environmental (HSE) officers
- Staff responsible for chemical handling and laboratory operations
- Professionals seeking to implement safe and compliant laboratory practices

## Individual Benefits

Key competencies that will be developed include:

- Mastery of modern chemical laboratory operations and workflows
- Safe handling and maintenance of laboratory equipment
- Ability to conduct risk assessments and implement safety measures
- Knowledge of standard operating procedures (SOPs) and documentation
- Competence in hazard management and accident prevention
- Improved operational efficiency and compliance awareness

## Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Safer chemical laboratory operations with reduced accidents and incidents
- Compliance with regulatory and safety standards
- Improved productivity and operational efficiency in laboratory processes
- Strengthened organizational reputation for safety and quality
- Enhanced readiness for internal and external audits
- Establishment of a safety-first culture among laboratory personnel

## Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings - Insights into chemical laboratory operations, workflows, and safety standards
- Case Studies - Real-world examples of laboratory incidents and best practices
- Workshops - Hands-on exercises for equipment operation, hazard identification, and SOP development
- Peer Exchange - Group discussions on laboratory challenges and safety strategies
- Tools - Templates for risk assessments, SOPs, and safety checklists

## Course Outline

Detailed 2-Day Course Outline

Training Hours: 7:30 AM – 3:30 PM Daily Format: 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Modern Laboratory Operations and Equipment Handling

Module 1: Introduction to Modern Chemical Laboratory Operations (07:30 – 09:30)

- Overview of laboratory workflows and process optimization
- Types of chemical laboratories and their operational requirements
- Role of laboratory personnel in maintaining operational efficiency

Module 2: Laboratory Equipment and Maintenance (09:45 – 11:15)

- Overview of modern laboratory equipment
- Safe handling and routine maintenance practices
- Calibration, inspection, and troubleshooting of lab instruments

Module 3: Standard Operating Procedures (SOPs) and Documentation (11:30 – 01:00)

- Developing and implementing SOPs
- Record-keeping and compliance documentation
- Ensuring traceability and reproducibility of laboratory processes

Module 4: Risk Assessment and Hazard Control (02:00 – 03:30)

- Identifying chemical, biological, and physical hazards
- Implementing control measures and emergency protocols
- Promoting a safety culture in the laboratory

Day 2: Laboratory Safety and Compliance Practices

- Safe handling, storage, and disposal of chemicals
- Laboratory personal protective equipment (PPE) and safety gear
- Emergency preparedness and incident response planning
- Case studies on laboratory accidents and preventive measures
- Workshop on implementing laboratory safety audits and continuous improvement

## Certification

Participants will receive a Certificate of Completion in Modern Chemical Laboratory Operations, Equipment, and Safety Practices, validating their skills in managing laboratory operations efficiently and safely while complying with regulatory and safety standards.

## Why Choose MAWA Events

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### In-House / Customized Training

Interested in running this course for your team?

Please contact us:

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