

# CALIBRATION, MAINTENANCE, AND TROUBLESHOOTING OF LABORATORY INSTRUMENTS

*“Ensure Accuracy, Reliability, and Optimal Performance of Laboratory Equipment”*

## Schedule

Date	Venue	Fees (Online)
28 - 29 Sep 2026	Online	USD 700 per delegate

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

## Introduction

Accurate and reliable laboratory instruments are essential for scientific research, quality control, and regulatory compliance. This online course provides participants with the knowledge and practical skills needed to calibrate, maintain, and troubleshoot laboratory instruments effectively. Participants will gain hands-on insights into ensuring precision, minimizing downtime, and extending the lifecycle of critical lab equipment.

Through interactive sessions, case studies, and practical exercises, attendees will learn systematic approaches to calibration, preventive maintenance, and troubleshooting. By the end of the program, participants will be able to optimize laboratory performance, reduce errors, and ensure compliance with international standards.

## Objectives

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

- Understand principles and standards for calibration of laboratory instruments.
- Perform routine maintenance to ensure reliability and accuracy.
- Identify, diagnose, and troubleshoot common equipment issues.
- Implement preventive measures to minimize instrument downtime.
- Ensure compliance with quality and regulatory standards in laboratory operations.

## Why Attend

- Gain practical skills in calibration, maintenance, and troubleshooting of lab instruments.
- Improve the accuracy and reliability of laboratory measurements.
- Reduce downtime and extend the life of critical laboratory equipment.
- Ensure compliance with industry standards and regulatory requirements.
- Network with peers and share practical experiences in laboratory management.

## Target Audience

This program is designed for:

- Laboratory technicians and engineers
- Quality control and assurance professionals
- Laboratory managers and supervisors
- Maintenance personnel responsible for lab equipment
- Professionals involved in calibration, testing, and troubleshooting of laboratory instruments

## Individual Benefits

Key competencies that will be developed include:

- Mastery of calibration techniques and maintenance procedures.
- Skills to diagnose and troubleshoot equipment malfunctions.
- Ability to implement preventive maintenance strategies.
- Enhanced knowledge of quality and regulatory compliance standards.
- Capability to optimize laboratory instrument performance and reliability.

## Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved reliability and accuracy of laboratory instruments.
- Reduced equipment downtime and maintenance costs.
- Enhanced compliance with quality assurance and regulatory standards.
- Strengthened operational efficiency and productivity in laboratory processes.
- Greater confidence in managing critical laboratory instrumentation.

## Instructional Methodology

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

- Strategy Briefings - Overview of calibration principles, maintenance techniques, and troubleshooting strategies
- Case Studies - Analysis of real-world laboratory instrument issues and resolutions
- Workshops - Hands-on exercises for calibration, preventive maintenance, and troubleshooting
- Peer Exchange - Group discussions on challenges and lessons learned in lab equipment management
- Tools - Templates and checklists for calibration, maintenance logs, and troubleshooting guides

## 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 Break: 01:00 – 02:00

Day 1: Fundamentals of Calibration and Maintenance

- Module 1: Principles of Calibration and Standards (07:30 – 09:30)
- Module 2: Routine Maintenance Procedures (09:45 – 11:15)
- Module 3: Common Issues and Troubleshooting Techniques (11:30 – 01:00)
- Module 4: Workshop: Calibration and Maintenance Simulation (02:00 – 03:30)

Day 2: Advanced Troubleshooting and Optimization

- Module 1: Diagnosing Complex Equipment Failures (07:30 – 09:30)
- Module 2: Preventive Maintenance Planning and Documentation (09:45 – 11:15)
- Module 3: Compliance and Quality Assurance Standards (11:30 – 01:00)
- Module 4: Interactive Workshop: Troubleshooting Exercise and Peer Feedback (02:00 – 03:30)

## Certification

Participants will receive a Certificate of Completion in Calibration, Maintenance, and Troubleshooting of Laboratory Instruments, validating their expertise in laboratory equipment management, calibration, and troubleshooting practices.

## Why Choose MAWA Events

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