Chrom Africa

Bringing Scientific & Technical Resources to the Africa Continent

SERVICE AND MAINTENANCE OF MOLECULAR/ MICROBIOLOGY LABORATORY EQUIPMENT

6th - 10th APRIL 2026

Purpose

This intensive 5-day hands-on program equips participants with practical skills in servicing, maintaining, troubleshooting, and verifying the performance of essential molecular biology and microbiology laboratory equipment. The training focuses on operational reliability, preventive maintenance, calibration, compliance, and minimizing downtime in diagnostic, research, and quality control laboratories. With an emphasis on applied learning, the program balances **80% practical training** with **20% theoretical instruction** to ensure participants can confidently apply knowledge in real laboratory settings.

Target Audience

The training is intended for:

- Laboratory Supervisors, Laboratory technologists and technicians.
- Molecular Biology and Microbiology Analysts
- Quality control/assurance personnel and Managers in clinical, research, food, pharmaceutical, and industrial laboratories.
- Biomedical Engineers, Service Engineers
- Equipment Custodians & Facility Managers
- Professionals seeking to strengthen their knowledge of maintenance and servicing techniques for microbiology and molecular laboratory equipment.

Course Duration

The training will be conducted over five consecutive days, combining interactive lectures, demonstrations, and intensive hands-on sessions.

Day 1	6-04-26	Activity
9.00 – 10.00 am		**Orientation, Safety, and Introduction to Laboratory Equipment**
		• Registration, Orientation and expectations • Laboratory safety principles (PPE, biosafety cabinets practices, biochemical handling and spill responses, waste management and decontamination procedures)
10.00 – 10.30 am		**TEA- BREAK**
11.00 – 12.30 p.m		• Overview of major equipment: PCR machines, balances, microscopes, vortex mixers, hoods, autoclaves, Centrifuge, refrigerators, incubators, spectrophotometers and freezers
12-30 – 14.00		**LUNCH - BREAK**
14.00 – 16.30		• Basic operational principles of selected equipment – Fundamental components, sensors, heating/cooling elements, optics, motors, and control systems – Equipment startup, shutdown and routine checks
Day 2	**7-04-26**	**Activity**
9.00 – 10.30 am		**Maintenance Programs and Common Operational Problems** • General equipment cleaning procedures – Safe and effective use of detergents, disinfectants, and solvents – Cleaning of sensitive optical and electronic components • Preventive vs corrective maintenance approaches (Key differences &Importance of preventive servicing in minimizing downtime)
10.30 – 11.00 am		**TEA- BREAK**
11.00 – 12.30 p.m		• Common Equipment Faults and Their Causes (PCR thermal block malfunctions, Microscope lens contamination, Weighing balance calibration drift, Centrifuge imbalance and rotor issues, Temperature drift in incubators and freezers, Autoclave pressure and seal failures)
12.30 – 14.00		**LUNCH - BREAK**
14.00 – 16.30		• Developing Equipment Service & Maintenance Schedules – Maintenance planning models – Creating equipment-specific preventive maintenance checklists – Record-keeping templates and compliance requirements

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Day 3	8-04-26	Activity
9.00 – 10.30 am		**Calibration, Verification and Troubleshooting** • Importance of Calibration – Link to data quality, laboratory reliability, and safety – Regulatory expectations and ISO/IEC 17025 considerations • Calibration Procedures for Core Laboratory Equipment-; Balances, Pipettes, Spectrophotometers, Centrifuge, Thermocyclers (PCR machines)
10.30 – 11.00 am		**TEA- BREAK**
11.00 – 12.30 p.m		• Understanding and Interpreting Calibration Certificates – Key parameters, acceptance criteria, and traceability • Troubleshooting Major Microbiology & Molecular Equipment; Error codes, Mechanical failures & Electrical problems
12.30 – 14.00		**LUNCH - BREAK**
14.00 – 15.30		• Equipment Lifecycle Management-; Handling obsolete equipment & Replacement planning and procurement considerations

Day 4	9-04-26	Activity
9.00 – 10.30 am		**Digital Tools, Software Applications, and Advanced Safety** • Overview of equipment software: PCR analysis programs/systems, microscope imaging tools and data acquisition and storage systems
10.30 – 11.00 am		**TEA- BREAK**
11.00 – 12.30 p.m		• Integration of equipment with Laboratory Information Management Systems (LIMS) • Digital maintenance & calibration scheduling • Digital record keeping for maintenance and calibration logs • Advanced Laboratory Safety-; Safety symbols and hazard signage, Color coding in laboratory safety systems & Emergency response protocols
12.30 – 14.00		**LUNCH - BREAK**
14.00 – 15.30		**Integrated Maintenance Planning, Documentation, Quality Standards** • Equipment Documentation & Reporting – Good documentation practices (GDP), Creating and maintaining equipment maintenance logs, Service checklists and troubleshooting templates & Developing Maintenance SOPs • Spare Parts, Inventory & Service Management – Identifying critical spare parts, planning preventive maintenance schedules, contracted vs. in-house servicing, Managing service contracts and warranties

Day 5	10-04-26	Activity
9.00 – 10.30 am		• ISO/IEC 17025:2017 Requirements for Equipment • Calibration intervals, Equipment verification, Handling equipment nonconformities & Audit preparedness (internal/external audits)
10.30 – 11.00 am		**TEA- BREAK**
11.00 – 12.30 p.m		**Consolidation, Practice and Certification** – Comprehensive hands-on practice: Cleaning, calibration, troubleshooting, software use • Maintenance and verification of selected laboratory equipment
12.30 – 14.00		**LUNCH - BREAK**
14.00 – 15.00		• Group presentations on assigned case studies (equipment service and maintenance scenarios) • Recap and reflection on the course • Closing ceremony and issuance of certificates

Deadline: 26th March 2026

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Cost Kes. 125,000.00 or USD 1,200.00 exclusive of taxes

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Online Training available at: www.chromafrica.com

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