

NTHRYS WORKSHOPS.

Pipetting Accuracy Calibration and Maintenance Workshop

Workshop Index Duration: 2 DAYS

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Quick Summary

Clinical Chemistry Hands On Precision Focused

Core Skills in Accurate Pipetting, Calibration, and Routine Care

Learn the principles of accurate liquid handling, volume consistency, and precision control in routine laboratory work.

Liquid Handling Precision Control

Understand pipette types, operating mechanisms, range selection, and the impact of technique on measurement quality.

Pipette Types Technique Quality

Review calibration logic, gravimetric checks, environmental influence, and common sources of dispensing error.

Calibration Logic Dispensing Errors

Examine preventive maintenance steps, cleaning practices, seal

care, and storage habits that support reliability.

Preventive Maintenance Reliability

Connect pipetting performance to assay reproducibility, laboratory quality, and troubleshooting decisions.

Reproducibility Quality Practice

Overview

Laboratory Skills Interactive Learning Applied Outcomes

Workshop Scope, Audience Profile, and Learning Outcomes

This workshop introduces pipetting as a critical laboratory skill that directly influences analytical accuracy and repeatability.

Analytical Accuracy Repeatability

Participants explore aspiration and dispensing technique, tip fit, angle control, immersion depth, and timing effects.

Technique Factors Timing Effects

The session suits students, laboratory technicians, analysts, and staff handling routine measurements in clinical settings.

Students Laboratory Staff

By the end of the workshop, attendees can explain calibration flow, perform accuracy checks, and support better volume control.

Accuracy Checks Volume Control

Attendees also learn to recognize worn components, leakage signs, inconsistent delivery, and maintenance needs.

Leakage Signs Maintenance Needs

Outcome discussions strengthen confidence in daily pipetting practice, documentation, and quality-focused handling.

Documentation Quality Handling

Agenda

Skill Development Hands On Practice Ready

Agenda Flow and Hands-on Demonstrations

Modules cover pipette construction, operating principles, volume setting, and basic calibration requirements.

Pipette Construction Volume Setting

Participants review gravimetric verification, tolerance concepts, environmental corrections, and recording practices.

Gravimetric Checks Tolerance Review

Hands-on discussions demonstrate aspiration rhythm, dispensing control, reverse pipetting, and multichannel consistency points.

Dispensing Control Reverse Pipetting

Exercises include identifying leakage, damaged seals, tip mismatch, carryover, and user technique variation.

Error Detection Technique Variation

Case-based practice links pipetting errors to assay deviation, poor reproducibility, and corrective action planning.

Case Practice Corrective Action

The session concludes with maintenance schedules, cleaning awareness, storage guidance, and workflow discipline.

Cleaning Awareness Workflow Discipline

Deliverables

Reference Support Workshop Output Learner Ready

Deliverables, Support Material, and Frequently Asked Questions

Participants receive structured notes on pipetting technique, calibration workflow, maintenance steps, and error prevention.

Study Notes**Error Prevention**

Reference sheets summarize verification checkpoints, tolerance review, cleaning steps, and troubleshooting pathways.

Reference Sheets**Troubleshooting Pathways**

FAQ coverage explains whether prior calibration experience is needed and how beginners can develop reliable technique.

Beginner Friendly**Skill Building**

Additional FAQs address maintenance intervals, tip selection, environmental effects, and documentation practice.

Maintenance Intervals**Tip Selection**

The workshop helps learners build stronger technical language for liquid handling and laboratory communication.

Technical Language**Lab Communication**

Participants leave with a clearer framework for pipetting reliability, calibration awareness, and daily maintenance confidence.

Reliability**Maintenance Confidence**

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