



Jayasree Reva Phoenix Metrology Pvt. Ltd.

Calibration | Inspection | Testing | Training | Services

ISO 9001:2015 Certified | ISO/IEC 17025:2017 Accredited



Volume Metrology | Training Brochure

INTRODUCTION

The volumetric calibration process involves filling the container or instrument with a known volume of liquid, such as water or a calibration solution, and measuring the volume indicated by the container or instrument. The indicated volume is then compared to the known volume, and any discrepancies are recorded.

COURSE FEATURES

Training course covers the following contents:

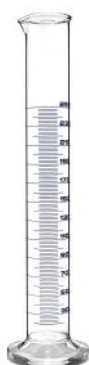
- Practical & Theoretical Training of Volume Calibration
- Specific Criteria & Guidelines Volume Calibration
- Estimation and Expression of Uncertainty in Measurement as per NABL 141
- Calibration and Measurement Capability (CMC) and Measurement Uncertainty in Calibration as per NABL 143
- Participation in Proficiency Testing Activities as per NABL 163
- Guidelines for Interlaboratory Comparison as per NABL 164



Beaker



Micropipette



Measuring Cylinder



Burette



TRAINING MATERIAL

Material in soft for Volume metrology as per ISO/IEC 17025: 2017, NABL oriented best-in-class training material traceable to National and International Standard requirements.

PRINCIPLE | THEORY

In the volumetric method a known amount of liquid is delivered into a container up to a certain point (usually corresponding to a graduation mark on a scale) and this volume refers to a reference temperature applicable for the intended use of the measure under calibration. When the measure is equipped with an adjustable indicating device or scale the calibrated volume can be adjusted to the nominal volume of the measure.



CALIBRATION RANGE

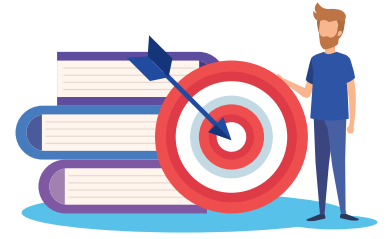
- Micropipette (1 μ l to 10,000 μ l)
- Pipette (0.1 ml to 100 ml)
- Burette | Pycnometer (1 ml to 100 ml)
- Volumetric Flask | Lechatlier Flask | Standard Flask | Conical Flask | Beaker (1 ml to 5,000 ml)
- Bulk Density Cylinder (3,000 ml to 15,000 ml)
- Measuring Cylinder | Jar (1 ml to 25,000 ml)

EXPECTED PARTICIPANTS

- Laboratory Managers
- Calibration and Testing Engineers
- Laboratory Engineers
- Quality Managers
- Metrology Professionals
- NABL Lab Engineers



OBJECTIVES OF VOLUME WORKSHOP



- Basic knowledge of calibration such as requirements of calibration, why do we need calibration, equipment selection, types of equipments, metrological traceability, selection of calibration agency etc.
- Understand requirement of ISO/IEC 17025:2017 requirements for measurement uncertainty.
- Understand theory of uncertainty of measurement, selection of uncertainty measurement factors, and calculation of measurement uncertainty.
- Understand the relevance of instrument measurement, including the use of instrument.
- Understand technical requirements and calibration method for relevant instruments.
- Preparation of calibration certificates and work sheet.

COURSE CONTENT

Course content covers the following topics:

- Comprehensive Trainer's Guide
- Power Point Presentation: Volume Metrology
- Introduction to Measurements, Fundamental & Derived Units
- Standards Organizations and Document Standards
- Calibration Procedures | Methods | Processes
- Practical example from the trainer selecting the best solution
- Documentation Training as per ISO/IEC 17025: 2017
- Measurement Uncertainty
- Questions & Answers
- Practical examples from your business (In-house courses only)
- Summary & Review



WORKSHOP METHODOLOGY



TRAINING SESSION

Theoretical training on the basics of the subject.

- Volume Laboratory



WORKSHOP & TEAM EXERCISES

Case studies from relevant industry samples taken up in line with the guidelines and formats.

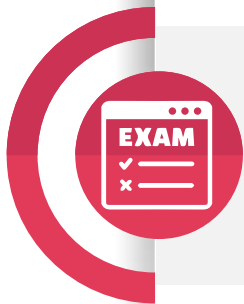
- Volume Laboratory



GRADED EXERCISE

Graded exercises to evaluate individual participant's progress during the course.

- Volume Laboratory



FINAL EXAMS

Business as usual, we have a final examination to evaluate and certify the participants.



CONTINUING SUPPORT

We provide continuing support to new projects and provide project assistance based on client requirements.

CERTIFICATION

- Certificate of course completion to successful participants.
- Attendance for the entire duration of the course is compulsory.



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Dimensional | Pressure | Torque | Force | Hardness | Impact | Mass | Volume |
Electro-Technical | Thermal | Acoustics | Acceleration & Speed | Fluid Flow | Optical |
UTM | TTM | Tachometer | Anemometer | Durometer | Lux Meter | Push Pull Gauge |
Rockwell | Brinell | Vickers | Micro Vickers | Mechanical Testing | Impact Testing :
Mechanical Properties of Metals and Non-Metals



CONTACT US

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