



Jayasree Reva Phoenix Metrology Pvt. Ltd.

Calibration | Inspection | Testing | Training | Services

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



Density Metrology | Training Brochure

INTRODUCTION

Density calibration typically involves comparing the readings of the density measuring instrument or device being calibrated to the readings of a reference standard with a known, accurate density. Common examples of instruments or devices used for density measurement include hydrometers, densitometers, and pycnometers.

COURSE FEATURES

Training course covers the following contents:

- Practical & Theoretical Training of Density Calibration
- Specific Criteria & Guidelines Density 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



Twaddle Hydrometer



Density Hydrometer



Lactometer



Butyrometer

TRAINING MATERIAL

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



PRINCIPLE | THEORY

Density is defined as the mass per unit volume of a substance. It is typically measured in kilograms per cubic meter (kg/m^3) or grams per cubic centimeter (g/cm^3). The density of a substance is determined by its molecular structure and the amount of space between its particles. Generally, substances with tightly packed particles have a higher density than those with loosely packed particles.



CALIBRATION RANGE

- Density | Specific Gravity | Brix Hydrometer
- Twaddle Hydrometer
- Lactometer
- Alcometer
- Butyrometer
- Baume Hydrometer
- Sikes Hydrometer

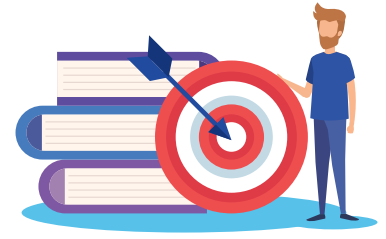


EXPECTED PARTICIPANTS

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



OBJECTIVES OF DENSITY 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: Density 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.

- Density Laboratory



WORKSHOP & TEAM EXERCISES

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

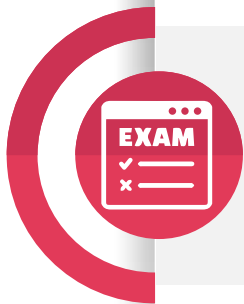
- Density Laboratory



GRADED EXERCISE

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

- Density 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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