

# Volume Metrology

## Course Objectives

The course provides fundamentals of volume determination using the gravimetric method, which is the standard method used by NMIs and accredited laboratories to calibrate volumetric standards. Calibration of volumetric standards by weighing distilled water that is contained or delivered (dispensed) by the instrument to be calibrated. Conversion of mass measurements to volume values using distilled water, and Z factors. Identifying the factors that affect volume measurements. Determination of a compensation factor required for the mass lost due to evaporation during calibration of small volume. Evaluation of measurement uncertainty in volume metrology.

## Course Content

The course covers the following:

- Calibration of volumetric standards using the gravimetric method
- Factors affecting volume measurements (environmental conditions including temperature)
- Determination of air and water density
- The use of Z factors to convert mass to volume
- Uncertainty of measurements for volumetric standards using the gravimetric method
- Reporting of results and interpretation of calibration certificates in volume metrology

## Course Date

05-09 August 2024

## Duration

5 days

## Cost

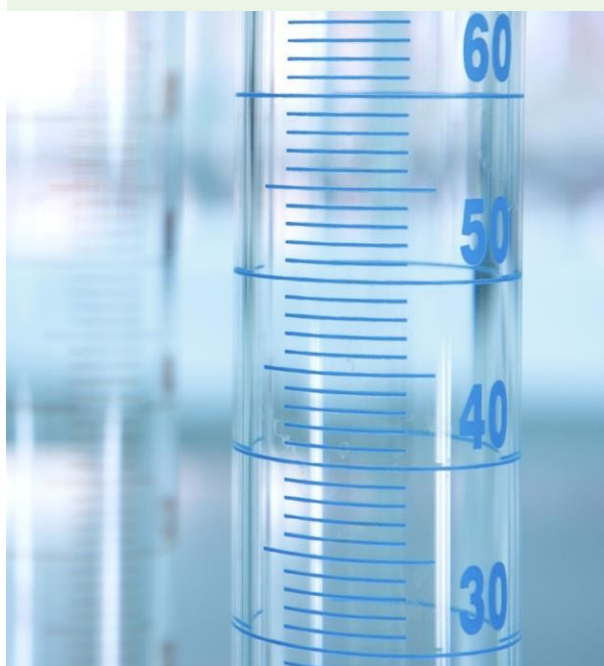
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## Who should attend?

Calibration metrologists in volume metrology, scientists, quality engineers, testing laboratory personnel, analytical chemists/technicians and anyone who needs to perform volume calibrations accurately.

## Course Information

The course is presented by professional scientists with years of technical experience in mass, volume, and density metrology. Over a 5 days duration, theoretical background is presented, practical measurements, and calculations are performed. After a written examination, a certificate of successful completion is issued for passing the exam. A certificate of attendance is issued for attending and not passing the exam.



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