

## “Quantifying Measurement of Uncertainty in Chemical Analysis”

Understand the principles, and concepts, and apply the correct approaches in quantifying measurement uncertainty in chemical analysis.

Knowing the uncertainty of test results provides confidence in measurements and strengthens the reliability of laboratory findings

Course Duration: 2 days

### Course Overview

This course provides comprehensive training on the principles and application of measurement uncertainty in chemical laboratories. Participants will acquire essential knowledge and skills to identify, quantify, and report measurement uncertainty, ensuring compliance with ISO 17025 requirements.

### Course Objectives

Upon completion of this course, participants will be able to:

- Understand the fundamental concepts of measurement uncertainty.
- Identify sources of uncertainty in chemical measurements.
- Apply statistical methods for quantifying measurement uncertainty.
- Quantify uncertainty using method validation data.
- Calculate combined and expanded uncertainty.
- Report measurement uncertainty effectively.
- Apply decision rules in conformity assessment.
- Document measurement uncertainty reports.

### Course Content

This course offers comprehensive training in measurement uncertainty for chemical analysis,

Invest in a professional development program to build laboratory personnel's proficiency in quantifying measurement uncertainty for test results.

covering the definition of measurement uncertainty, error types, ISO 17025 requirements, sources of uncertainty, basic statistical tools, approaches to quantifying uncertainty, quantification using method validation data (random and systematic errors), calculation of combined and expanded uncertainty, reporting, decision rules, documentation, and practical workshops with case studies.

### Key Course Benefits

- Gain a thorough understanding of measurement uncertainty principles.
- Learn practical techniques for quantifying and reporting uncertainty.
- Improve the reliability and validity of your laboratory results.
- Ensure compliance with ISO 17025 standards.

