

Estimation of Uncertainty of Measurement – Physical Measurements

Aim of the Course

Whilst most do not argue that uncertainty in making measurements is an unavoidable fact, there are many who do not have the necessary skills to estimate and calculate the actual value of the uncertainty. This short course has been designed to provide a solid basis for those who looking for an introduction to the concepts of estimating the uncertainty of measurement.

The ability to estimate measurement uncertainty is now a requirement of testing laboratories accredited to ISO 17025. This course is in line with the principles of the ISO Guide to Uncertainties in Measurement (GUM). The course will cover inter alia an introduction to the concept of measurement uncertainty, statistics for measurement uncertainty estimation, the basic principles of evaluating uncertainty, converting to standard uncertainties and combining uncertainties, quantifying uncertainty concepts, evaluation of an uncertainty budget, how to handle precision and using and conveying uncertainty.

To date more than 300 laboratory personnel have successfully attended this course, a feature of which is its strong practical flavour. Attendees are provided with the tools and skills needed to evaluate and estimate uncertainties in their own laboratories.

Whilst those planning to attend the NLA/CMETSA courses are recommended to bring their own calculators, in the case of this course a suitable statistical calculator is provided.

Pre-Requisites for attending this course

- Measurement System (Part 1 & 2)

Course Overview

1. Roadmap/Introduction
2. Definitions
3. Sources of Uncertainty
4. Basic Statistics
5. Applying the ISO Guide (GUM)
6. Mathematically modeling the measurement
7. Other principles
8. Reporting of uncertainty
9. Practical worked examples

Who should attend

Calibration and Physical Testing Laboratory Personnel

Course Duration

4 Days

Evaluation

Daily tests and the passing of a final examination are required in order to successfully complete this course