

INSTITUTE FOR DESIGN OF ELECTRICAL MEASURING INSTRUMENTS, MUMBAI

**OFFLINE WORKSHOP ON ESTIMATION & EXPRESSION OF
UNCERTAINTY IN MEASUREMENT
AS PER NABL - 141**

(Code No. 2568101)

1. Duration : Two Days (Offline Training Programme)
2. Date : 14th – 15th May 2025
3. Daily Timings : **9:30 am to 01.30 pm**
02.15 pm to 05.30 pm
4. Venue : **Training Programme will be conducted Offline.**
5. Fee/participant : **Rs. 8,260/-** (Rs. 7,000/- + 18 % GST) per participant
Payment can be transferred through NEFT/RTGS or DD drawn in favour of IDEMI, Payable at Mumbai in advance to confirm the nomination.
You can also make online payment by using following link:
<https://rzp.io/l/gGcnfmx>

6. Who should attend :

Persons working in All types of Calibration & Testing Laboratories, Quality Assurance Department, Quality Control Department and R & D Labs who are concerned with measurement, testing, calibration and quality assurance.

8. Why should you attend :

The expression of '**Uncertainty in Measurements**' is an integral component of the certificate being issued by the calibration and testing laboratories. The results must be produced with a high degree of exactness in measurement system. This concept is equally true for all other fundamental units of measurement as per ISO/IEC 17025 (General requirements for the competence of testing and calibration laboratories). Further, repeated observations made during precision measurement of any parameter are rarely found identical even when these are made under the same conditions.

This is due to the UNCERTAINTY in measurement, which is prevalent in all measurements which need to be estimated and evaluated.

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9. Objectives :

This training is designed to expose the participants not only to the concept of measurement uncertainty, but also provide an understanding of how to actually estimate and evaluate the same for different types of measurement as per NABL Document No. 141. Participants would be required to estimate and evaluate measurement uncertainty of actual case studies.

10. Training Contents :

- a) Uncertainty: concept, sources & measures
- b) Definitions of related terms and phrases
- c) Estimation & Evaluation of standard uncertainty
- d) Type A & B Uncertainty, Standard Uncertainty, Combined Uncertainty, Degrees of Freedom, Sensitivity Coefficient, Coverage Factor, Expanded Uncertainty
- e) Step by step procedure for Estimation and Evaluation of **Uncertainty in Measurement**
- d) Case studies in Calibration of Pressure, Temperature, Mass, Electrical, Dimension Parameters

11. Faculty: 1) Mr. Pradeep Gujarathi, Ex. Deputy Director (Elect.)
2) Mr. Pankaj Ambekar, Senior Technical Assistant

12. Certificate of participation will be issued to each attending participant.