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MEASUREMENT UNCERTAINTY FOR CHEMICAL & MECHANICAL PARAMETERS BY GUIDE FOR UNCERTAINTY MEASUREMENT (GUM) METHOD

Course Code : 1301

08th - 09th April 2025



Key Takeaways

- Understand the theoretical concepts of measurement uncertainty and the principles of the Guide to the Expression of Uncertainty in Measurement (GUM).
- Evaluate and express measurement uncertainty for chemical composition and mechanical properties – tensile & hardness measurement.
- Practical guidance on applying GUM principles in testing and calibration

CONTACT US



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About AEAMT

Centre for Skill Development, is a flagship initiative of CMTI, aims to enhance the knowledge and skills of practicing engineers, create job ready engineers to the Indian Manufacturing sector and to bridge the gap between industry and academia.

Focused Area / Objectives :

- Understanding the basic concepts and principles of measurement uncertainty
- Identifying and categorizing different types of uncertainties that can affect measurements
- Learning essential terminologies such as degrees of freedom, standard deviation, coverage factor, confidence level and distribution factors (Normal, Triangular, Rectangular)
- Recognizing the parameters that influence measurement uncertainty
- Analyzing typical case studies for estimating uncertainty in chemical composition analysis of metals (spectroscopy) and mechanical parameters (hardness and tensile tests)

Targeted Participants :

This course is ideal for design engineers, production engineers, quality engineers, mechanical engineers, and other professionals who need to work with metals and alloys in their roles.

Programme Co-ordinator :

Mr. Srinivasa Rao C, is currently working as Scientist- D at the Group for Materials And Metallurgy and having 15 years of Professional experience in the field of Uncertainty Measurement.

for information :-

<https://cmti.res.in/cmtiemployee/champuri-srinivasa-rao/>

Programme Schedule :

It is a **Two days (02)** Non - Residential Training Programme scheduled during **08th -09th April 2025**. The Programme will be held at Central Manufacturing Technology Institute, Bengaluru.

Participation fees :

Rs. 7,800/- plus GST @ 18%***, per participant. This includes Course Kit, veg lunch, midsession tea.

Course Fee can be paid through NEFT / RTGS / Demand Draft. Demand Draft to be drawn in favor of "Central Manufacturing Technology Institute", payable at Bengaluru and should reach CMTI one week before the actual date of commencement of the course

Beneficiary for RTGS/NEFT

a) Name	: Central Manufacturing Technology Institute
b) GST No	: 29AAATC2085KIZJ
c) Account No	: 10521862015
d) Bank Name & Branch	: State Bank of India, Yeshwanthpur Branch
e) IFSC Code	: SBIN0003297
f) MICR Code	: 560002055

Additional Information :

- A 10% rebate on course fee will be given to organizations nominating 3 or more participants for each programme, only if payment is made in advance, ten days before the commencement of the course
- Individuals/ Companies interested in participation are requested to fill in the enclosed Enrollment Form and submit at the earliest.
- Participants are advised to proceed for the programme only after the nominations / Programme confirmed by us (by Fax / Letter / Phone / E-Mail).
- Participants should report at CMTI on the day of commencement of the course. Participants are advised to reach Bangalore the previous day evening/ night.
- Course will be conducted from 09:00 to 17:00 hrs. Participants may plan their return journey accordingly.
- Participants will be given Certificate after the completion of the Training Programme
- Enclosed are the tentative programme contents for ready reference
- GST No. to be shared while sending your nomination / Registration (If a company is exempted from GST they have to provide GST Exemption certificate).
- Please note that Course fee once paid will not be refunded. However, change in nomination will be permitted.

Note: * Taxes and other levies will be charged as per the prevailing rates at the time of Billing**

Tentative Programme Schedule

Day 01	<p>Description of basic terms (Systematic error, Random Error, Precision, Uncertainty, Linearity, Least Count, Resolution) Concept of Measurement Uncertainty, Benefits of establishing Uncertainty</p> <ul style="list-style-type: none">•Description of terminologies such as Degrees of Freedom, Standard Deviation, Coverage factor, Confidence level, Distribution Factors (normal, triangular, rectangular).•Method of Estimation of Measurement Uncertainty by GUM and Briefing of MCS method of estimation of uncertainty.•Typical Case Studies for Estimation Uncertainty for Chemical (Spectrometric – OES & Wet Analysis- Gravimetric)
Day 02	<ul style="list-style-type: none">•Typical Case Studies for Estimation Uncertainty for Chemical (Spectrometric - ICP& Wet Analysis- Volumetric) Contd.....•Typical Case studies for Estimation Uncertainty for Mechanical Parameter (Hardness & Tensile test) .•Briefing of the proceedings on Estimation of Measurement Uncertainty•Discussion (Question & answer session)•Evaluation

**For further enquiries / registration / nominations, please contact:
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