

## INTRODUCTION

Dimensional Inspection assess the Geometric characteristics of Parts & Products to assure their compliance with Design requirements and verifies the accuracy of product features that can decide reliability and functionality of the product / production. Engineers & Technicians involved in manufacturing processes and measurement applications need to have sound knowledge in proper selection, application, and care of typical measurement systems. Best practices in dimensional metrology need to be followed for obtaining reliable measurements.

Keeping this in view, Indian Machine Tool Manufacturers' Association (IMTMA) is organizing a 3 day programme on **Dimensional Metrology and Inspection** on 17 - 19 Oct 2022 at Pune. This programme will enhance the level of competency in usage of precision hand tools, bench top measuring instruments, attribute gages and other advanced measuring systems including surface roughness tester, VMM and CMM.

## FOCUS AREAS

- Fundamentals of Precision measurement
- Types of Data - Variable vs Attribute
- Laws of metrology - Abbes Law and Comparators law
- Measurement of GD&T parameters
- References and standard gages
  - Gage blocks
  - Surface plates
  - Cylindrical masters
- Proper use and applications of Basic "Hand" Tools – mechanical and digital type
  - Calipers
  - Micrometers
  - Digital Height gauge
  - Indicators – Plunger and Lever type
- Types, Selection and proper use of Attribute gages
  - Cylindrical
  - Thread
  - Radius
- Pneumatic Gauges – working principle and selection criteria
- Common applications of pneumatic gauges
- Introduction to Advanced Measurement Systems
  - Surface roughness tester
  - Video measuring system
  - Coordinate Measuring Machines (CMMs)
- Need of calibration of Measuring instruments &Gages
- Practical session on CMM, VMM, Surface Roughness tester and Measuring Instruments**

## KEY TAKE AWAYS

After undergoing the program, the participants will be able to

- Develop awareness, knowledge and skills necessary for the reliable measurement application / assessment of measurement quality
- Evaluate correct measuring methods / comparative measurements
- Get Hands-on practice in handling various measuring instruments
- Have overview of advanced measuring systems including VMM and CMM

## PARTICIPATION FEE

**Rs. 9000/-**  
+18% GST

**IMTMA Members/ Micro Companies/ Individuals/  
Educational Institutions / Students/ IMTMA Non  
Members/ Others**

**USD 360/-**  
**Overseas Participants**

**Group Concession : 10% for 3 to 5 and 20% for 6 and more delegates being nominated from the same company**

## PARTICIPANT PROFILE

This programme is applicable for anyone who wishes to learn the basic tools and techniques required for reliable measurement. This will benefit Engineers, technicians, machinists, toolmakers, etc involved in Quality Assurance / Quality Control, Production, Manufacturing Engineering, Design and R&D functions of manufacturing industries.

The programme will be practical oriented with hands-on practice in various measuring instruments. Participants would be encouraged to raise questions and solicit feedback from the expert faculty.

## FACULTY

This program will be conducted by **Mr. Avinash Khare, Mr. Yuvaraj Patil and Mr. Sushant Tangade**

**Mr. Avinash Khare** he is presently working as a Consultant and Head for IMTMA Pune Technology Centre for last 5 years. He has been designing, developing content and delivering wide range of Training Courses as a Faculty. He is Electrical Engineer by Qualification and he has worked for over 33 years at Tata Motors Pune in various capacities ranging from R&D in Industrial Electronics, Machine Maintenance, Technology Procurement, Head of Machine Shops, Tool Room Shop Head, Head of Die Design and Champion in Business Excellence. He has taught Instrumentation and Bio Medical Instrumentation at Pune University as part time faculty.

**Mr. Yuvaraj Patil** is a mechanical engineer having more than 15 years of experience in CNC Machine Shop & Tool Room. He has worked with various companies – ASB International, Videocon, Menon & Menon and PARI. Additionally, he has 8+ years of experience in training engineers in CNC Machining area with hands-on practice.

**Mr. Sushant Tangade** is an expert in machine tool manufacturing, try-out and proving with 6+ years of experience in NPPL, Super Auto India Ltd. He has worked in Quality assurance and Product development.

### For Registration Contact

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**REGISTRATION** : Prior registration for participation is necessary. Number of participants is limited and will be accepted on 'First Come First Serve' basis. A Certificate of participation will be issued to participants.  
**Important Information** : Participation fee includes, course material, working lunch and tea / coffee. Interested companies are requested to register online by clicking on 'REGISTER' button and by filling up the nomination authority and participant's details in specified form.