MAHARAJA AGRASEN INSTITUTE OF TECHNOLOGY, DELHI

Department of Mechanical Engineering

Date of Report:	May 25, 2026
Department:	Department of Mechanical Engineering
Activity Category:	Workshop
Title of the Activity:	Workshop on Precision Measurement & Metrology Instruments

1. Basic Details

Date of Activity: 20–22 May 2026
Day: Wednesday to Friday
Time: 10:00 AM – 4:00 PM
Venue/Platform: COE-Precision Measurement (Room 211)
Organized by: Department of Mechanical Engineering
Activity Coordinator(s): Mr. Rakesh C. Saini, Dr. Piu Jain, Mr. Atul Kaushik
Number of Participants: 20 (Faculty 18 & Staff 2)

2. Resource Person / Speaker Details

Name: Mr. Shubham Kumar
Designation: Application Engineer
Organization: Mitutoyo South Asia Pvt. Ltd.
Area of Expertise: Dimensional Metrology, Precision Calibration, and Advanced Industrial Measurement Systems
Brief Profile: A certified technical expert from Mitutoyo specializing in high-precision measurement instrumentation, industrial quality control standards, and geometric dimensioning and tolerancing (GD&T) applications.

3. Objectives of the Activity

- To bridge the curricular gap in the Metrology & Quality Control course by providing hands-on industrial exposure.
- To familiarize faculty and lab staff with the operations, calibration, and maintenance of high-precision Mitutoyo equipment.

- To enhance technical competencies in engineering measurement, mapping directly to Program Outcomes (POs) related to modern tool usage and lifelong learning.
- To support Sustainable Development Goal (SDG) 4 (Quality Education) and SDG 9 (Industry, Innovation, and Infrastructure) by upgrading technical institutional infrastructure capabilities.

4. Description of the Activity

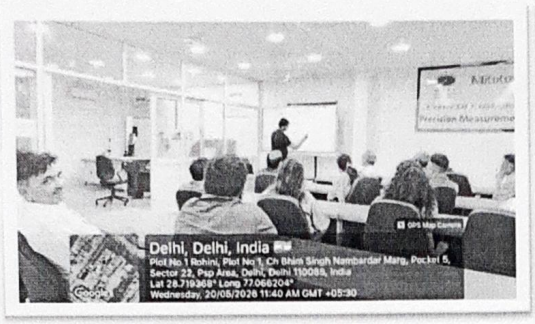
The Department of Mechanical Engineering organized a comprehensive 3-day short-term workshop focusing on "Precision Measurement & Metrology Instruments" from May 20 to May 22, 2026. Held at the Centre of Excellence for Precision Measurement (Room 211), the program targeted the internal faculty and technical staff to upgrade departmental proficiency in quality inspection tools.

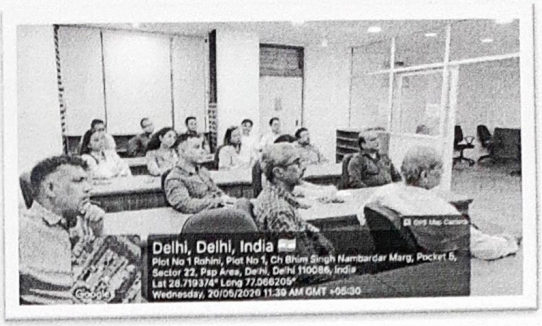
The training session was conducted by an external field expert from Mitutoyo. Over the course of three days, participants were introduced to advanced dimensional metrology concepts, linear and angular measurements, and surface roughness evaluation profiles. The interactive sessions included meticulous hands-on training operations on newly integrated Mitutoyo machinery. Participants actively engaged in calibration routines, uncertainty analysis, and software integration for data collection, clearing technical doubts regarding measurement micro-errors and industrial testing standards during the dedicated Q&A sessions.

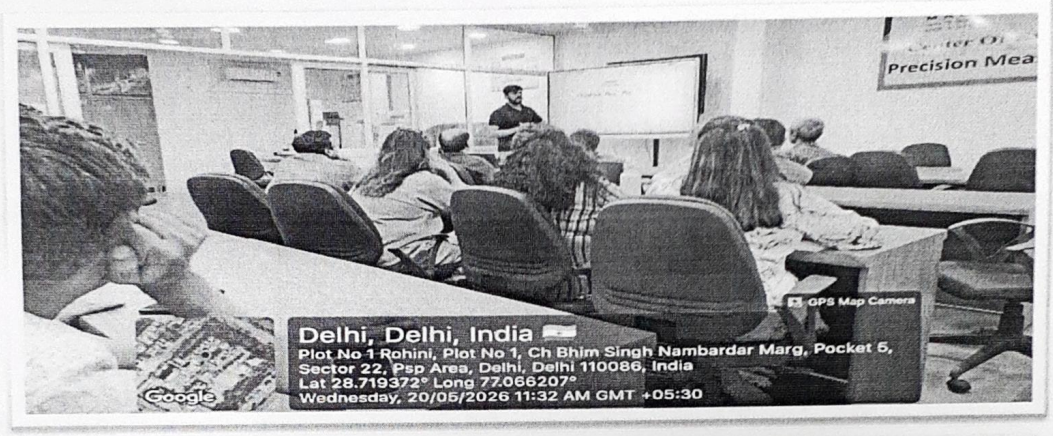
5. Learning Outcomes / Impact

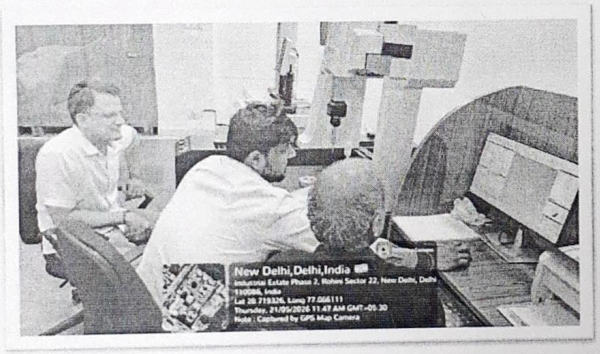
- **Skills Gained:** Participants achieved operational competency in operating advanced digital micrometer systems, vernier calipers, and profile projectors manufactured by Mitutoyo.
- **Knowledge Enhancement:** Deepened understanding of measurement metrics, tolerancing limits, and error reduction methods in manufacturing processes.
- **Course Gap Fulfilled:** Successfully supplemented the practical benchmarks required for the Metrology course framework within the mechanical curriculum.
- **Innovation Mindset Development:** Enabled faculty members to guide student research projects with higher measurement precision and reliable engineering data metrics.

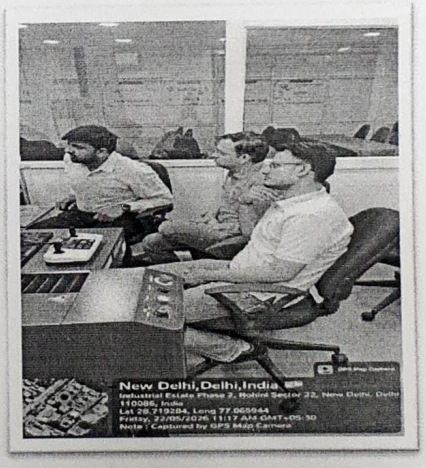
6. Photographs & Documentation











- Attendance Sheet (Attached as Annexure I).

7. Feedback Summary

- **Mode of Feedback Collection:** Google Form
- **Average Rating:** 4.7 / 5.0 (Excellent)
- **Key Feedback Insights:** Participants highly appreciated the practical demonstrations and requested more advanced sessions on coordinate measuring machines (CMM) and computer-aided inspection in the future.

Signatures & Approvals

Report Prepared By:

Mr. Rakesh C. Saini
Activity Coordinator

Verified By:

Dr. Vaibhav Jain
HOD, Dept. of ME

Approved By:

Prof.(Dr.) Vikram Bali
Director, MAIT