

This two day course presents the science of dimensional metrology and effective usage of intermediate metrology instruments with the objective to develop awareness, knowledge and skills required for reliable measurements.

Day 1

- Concepts & fundamental laws of metrology, basic concepts of Intermediate tools via presentations, videos, practical demonstrations & interactive discussions.

Day 2

- Review; basic concepts for Intermediate tools via presentations, videos, practical demonstrations & interactive discussions.

Contents

Day 1	<ol style="list-style-type: none"> 1. Introduction to Metrology <ol style="list-style-type: none"> a. Introduction to SI units b. General & legal metrology terms <ol style="list-style-type: none"> a. Importance & scope of metrology b. Main elements of metrology c. NABL/NPL & International standards d. Traceability 2. Concepts & fundamental laws <ol style="list-style-type: none"> a. Metrology principles & techniques <ol style="list-style-type: none"> i. Abbe's principle ii. Mechanical & thermal stability iii. Scales: high resolution, linearity, traceability iv. Alignment v. Probe/surface interaction vi. Error mapping & error separation techniques b. Measurement & Uncertainty c. Types and sources of errors d. Hertz Law 3. Surface Roughness <ol style="list-style-type: none"> a. What is roughness b. What is filter c. Selection of sampling length d. Parameters & functions of roughness testers e. How to select appropriate surface roughness tester f. Practical demonstrations of SJ210 (Portable roughness tester) 4. Q & A Session
Day 2	<ol style="list-style-type: none"> 1. Input Tools <ol style="list-style-type: none"> a. Introduction to SPC b. Measurement Data Management c. How to select USB Input Tool as per application or gauges d. Introduction to Measurement data collection software (USB-ITPAK) 2. 2D Height Gauge (Linear Height) <ol style="list-style-type: none"> a. Introduction b. Basic features c. How to use Linear Height for complicated components d. Practical demonstrations of 2D Height Gauge (Linear Height) 3. Q & A Session