

**Course Title: MEASUREMENT BY
DIRECT & INDIRECT MEASUREMENT**

Course Code: MET 102

Course Background / Summary:

In the manufacturing industry today, the instruments for angular measurement are equivalent to those for linear measurement and range from simple scaled instruments to highly sophisticated types for direct measurement. However, there is also a group of instruments for the indirect measurement of angles. Therefore, this course will focus on the mechanisms of the most familiar angular measuring instruments for direct measurement, namely Bevel Protractor and as well as on the principles of trigonometry which is based on the Sine Bar for the indirect measurement of angles.

Course Objectives:

- Describe the inherent differences between direct and indirect method for angular measurement.
- Measure angles with the Universal Bevel Protractor and Sine Bar.

Target Audience:

- Technicians, Supervisors, Quality Practitioners, Quality Inspectors, Metrologists, Technologists, Engineers, Instructors, Trainers and Lecturers.

Course Duration: 3 Days, Max: 5 Days

Course Contents

1.0 Definition and Applications of Metrology

6.0 Mechanisms and Principles of Bevel Protractor

2.0 The Importance of Metrology in Manufacturing Industry

7.0 Rules for Reading of Bevel Protractor

3.0 Standard System of Measurement

8.0 Principles of Trigonometry for Angular Measurement

4.0 Classification of Measurement Methods and Measuring Instruments

9.0 Sine Bar Methodology

5.0 Measurement of Angles