

# **Certificate Course in Dimensional Metrology**

A Training Course for  
**Operators and QC Inspectors working in Industry**

**Admission open for 3<sup>rd</sup> Batch**

**October 5, 2009**

**Organized and conducted by:  
National Centre for Quality Management  
Jointly with  
Don Bosco Institute of Technology**

## **1. Need and importance**

Measurements of dimensions are important both during manufacture, assembly and for acceptance of items outsourced or procured. With increase in foreign trade by way of exports, jobs are inspected and dispatched to avoid any problems later.

Knowledge of metrology is essential for selection of appropriate instruments, ensuring accuracy of measurements by correct use of instruments, for calibration of instruments and assessing measurement uncertainty.

Data collection, Data analysis and problem identification skills are required from QC inspectors to take fact based decisions and to improve Quality.

## **2. Target group**

- I. Operators in various trades such as Fitter, Turner, Machinist, Millwright who may have ITI/NCTVT qualification
- II. QC Inspectors who may have ITI/NCTVT qualification or a diploma qualification.
- III. Operators and QC inspectors who have come up with field experience and do not have formal training in basics of metrology and use of instruments.

Above modules provide for both theory and practice of Dimensional Metrology and meet skill requirements for Inspection in engineering industry.

Persons trained in these skills will improve their performance and will be accepted / preferred by industry. We expect industry will depute their employees for such training.

The courses will be conducted at Don Bosco Institute of Technology, Kurla.

NCQM will administer the programmes, admit delegates and monitor the same.

The course certificates will be issued under joint names of both. Marks/grades will be assigned as per scheme.

## **3. Course Objective:**

**Objective is to create awareness to**

- a] **Inherent variation by actual measurements on number of jobs.**
- b] **Concepts of Repeatability, Reproducibility, need for calibration, limits, fits and interchangeability**

**These will be explained through instructions, demonstrations and practicals.**

#### 4. Course Schedule

The courses is of modular nature of 30 Hours duration.

These are planned once in six months for a batch of 20 participants.

Class duration (2.5 hrs per day) to enable students working in shifts can attend the classes.

Timing: 5:30 pm to 8:00 pm with 15 min break--Mon to Thu (inclusive of Sunday full day)

#### 5. Course Validation

The courses has been validated by getting feedback from participants, and faculty.

#### 6. Course Fees : Rs. 2500/-

Rs. 2250/- (for NCQM Members & Don Bosco Students)

#### 7. Coverage:

S.No	Days	Topics	Number of hours	
			Theory	Practical
1	Mon	Role of measurement – an introduction	1 hr	nil
		Basic Mathematics and Basic Statistics	0.5 hr	1 hr
2	Tue	Interchangeability – specifications, type of fits,..	1.5 hrs	1 hr
3	Wed	Basic Mathematics and Basic Statistics	1 hr	1.5 hrs
4	Thu	Role of measurements- types of measuring instruments, applications+ demonstrations	1 hr	1.5 hrs
5	Fri	Traceability and Calibration	1 hr	1.5 hr
6	Sat	Characteristics of measurements and Choice of instruments	1 hr	1.5 hrs
7	Sun	Characteristics of measurements and Choice of instruments	NIL	7 hrs
8	Mon	Characteristics of measurements and Choice of instruments	-	2.5 hrs
9	Tue	Characteristics of measurements and Choice of instruments	NIL	1.5 hrs
10	Wed	Evaluation and Review – + Practicals	1.5 hr	1.0 hrs
11	Thu	Evaluation and Review – + Practicals	NIL	2.0 hrs
		Total	8.5 hrs	22 hrs

For developing hands on skills--

- a. 10 sets of instruments and 10 different type of jobs (each 10 Nos) will be provided in a tool box for each work bench.Two students will share the same.
  - b. A set of instruments will be provided for demonstration of measurement of other features.
8. For group and individual registration contact Programme Coordinator at [ncqm@vsnl.com](mailto:ncqm@vsnl.com), [ncqmmumbai@yahoo.co.in](mailto:ncqmmumbai@yahoo.co.in) Tel: 25170483 / 469 Mob: 9969542885