

**February 22 & 23, 2010**

**Course Objective**

To provide a critical and simplified foundation in fundamental lessons in proper interpretation of engineering drawings used in the design, manufacture and inspection of parts, which have geometric controls applied per ANSI Y14.5M-1982 and ASME Y14.5M-1994.

CEUs 1.6

**What You Will Learn Introduction to Theory and Rules**

- Rule 1 on Feature Size
- Rules 2 & 3 on Material Condition Principles Applied to Features
- Pitch Diameter Rule
- Comparison of Changes Between ANSI Y14.5M-1982 and ASME Y14.5M-1994
- Implications of +/- Tolerancing
- Conversion of Square Zone to Diametral

**Datums and Datum Features**

- Datum Precedence
- Planar Datum Features
- Datum Features of Size
- Inclined Datums
- Compound Datums
- Datum Targets and Partial Datum Features
- MMC, LMC and RFS Applied to Datum Features
- Introduction to Multiple Hole Patterns Defined as a Single Datum

**14 Geometric Symbols**

- Analysis of Symbols and Definitions
- Analysis of Tolerance Zones
- Actual Mating Envelope
- Supporting Symbolology

**Feature Control Frames**

- Single Segment Feature Control Frames
- Composite Feature Control Frames
- 2D Analysis of Single Segment and Composite Feature Control Frames
- Virtual Condition Principles
- Simultaneous Requirements
- Beginning Levels of 3D Analysis

**Beginning Analysis of Measurement Applications**

- Negative Implications of Specific Measurement Procedures
- Analysis of Data from Case Studies and Formula Calculations
- Position Calculation Exercises and Review of General Guidelines

**Global Simplification of GD&T**

- GD&T Boundary Comparisons
- Reduction of Symbolology (14 symbols down to 3 symbols)

Overview of Progression to “Level 3—Precision GD&T: Advanced Applications & Analysis”

**Prerequisites**

Blueprint Reading or equivalent knowledge.

**Who Should Attend**

This fundamental course is for those who must read and interpret engineering drawings and who want to develop or to improve their understanding of the basics of measurement tools, geometric symbolology and engineering drawing interpretation as applied per ASME Y14.5M-1994. Drafters, inspectors, designers, technicians, machine operators, toolmakers, technical managers and engineers will all greatly benefit.