**Objective:**
To provide a foundational understanding (interpretation and fundamental application) of mechanical drawings using linear tolerancing and GD&T in the design, manufacture and inspection of parts, which have geometric controls applied per ANSI / ASME or other national standards such as ISO.

**Course Length:**
2 days (16-hours) – 1.6 CEU’s

**Course Content:**
- **Introduction to Theory and Rules**
  - Rule 1 on features of size
  - Rules 2 & 3 on material condition principles (MMC, LMC & RFS)
  - Comparison of changes between standards
- **Linear Transformation to GD&T**
  - Implications of +/- tolerancing
  - Conversion of square zone to diametral
- **Datums and Datum Features**
  - Datum precedence
  - Planar datum features
  - Datum features of size
  - Inclined datums
  - Partial datum features
- **14 Geometric Symbols**
  - Analysis of symbols and definitions
  - Analysis of tolerance zones
  - Actual mating envelope
  - Supporting symbology
- **Feature Control Frames**
  - Single segment feature control frames
  - Introduction to composite feature control frames
  - 2D analysis of single segment feature control frames
  - Virtual condition principles
  - Beginning levels of 3D analysis
- **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 symbology (14 symbols down to 3 symbols)

**Targeted Audience:**
Any individual who must have the ability to “interpret” mechanical drawings using linear tolerancing and GD&T. Any manager with direct or indirect responsibility for product development, manufacturing, quality, customer interaction or supply chain management. Engineers of all technical disciplines, mechanical designers & drafters, mechanical inspectors & technicians, metrologists, machine operators, tool makers and statisticians who analyze data from mechanical components.

**Prerequisites:**
Introduction to Mechanical Drawings & GD&T