



# IIGDT Training

## “GD&T - Intermediate Principles”

### 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