IIGDT Training

"GD&T - Advanced Applications and Analysis"

Objective:

To provide applied working knowledge of advanced GD&T applications involving optimization strategies for given design applications, manufacturing methodologies and measurement planning.

Course Length:

- **2 days (16-hours)**

Course Content:

In-Depth Analysis & Implications of Advanced Principles

- MMC, LMC and RFS applied to datum features of size
- Multiple feature patterns used to define a single datum, and negative implications of using "non-functional" surfaces as datum features.
- 3D analysis of composite position callouts, in relationship to multiple-hole patterns defined as a single datum.
- Calculations for determining allowable position tolerance for floating and fixed fastener designs.
- Positioning holes and patterns of holes at "zero tolerance" for optimizing manufacturability and critical cost reductions.
- Positioning coaxial cylinders from independent datum features -vs- to each other and defined as compound datum features.
- Boundary principles used with profile for non-cylindrical shapes.
- Mathematical definitions and implications of ASME Y14.5.1M-1994.
- Surface roughness implications to features of size and form constraints.

Optimization Strategies in Applications & Analysis of Design, Manufacturing and Measurement

- Analysis and discussion of common error implications of dimensioning and tolerancing of tooling and functional gaging, based on product designs.
- Evaluate negative implications of common incorrect measurement procedures on coordinate measuring machines (CMMs) and discuss procedures to resolve / minimize problems.
- Review and analyze "your" engineering drawings and identify areas of negative financial implications, address questions to provide clarification/direction and make recommendations to optimize design intent and achieve maximum ROI.

Advanced Tolerancing Development

- 3D Complex Profile Geometry and Tolerance Boundaries used with & without datums

GD&T Implications to Corporate Six-Sigma Initiatives and Product Reliability

Targeted Audience:

Anyone requiring a greater understanding of GD&T from an advanced applications perspective. Specifiers and decision makers of engineering requirements and specifications as well as specifiers of manufacturing processes, measurement applications and statistical analysis. Engineers, designers, metrologists, technicians, machinists, toolmakers, senior inspectors, senior technicians, statisticians and mechanical engineers at all levels.

Prerequisites:

"GD&T Intermediate Principles" or equivalent knowledge! It is critical that each individual reviews the course content from the introductory course to ensure a positive level of proficiency in all areas. If not proficient, it is highly recommended that all individuals take or retake the introductory course prior to the advanced course to ensure an optimum and proficient level of understanding.