



APPLIED GEOMETRICS, INC.

Applications and Interpretation of Geometric Dimensioning and Tolerancing

3-Day Seminar (2.4 CEU's)

Course Description

This course is a comprehensive education in the ASME Y14.5 standard.

Objectives

1. Review the concepts and some of the language of the Y14.5 standard.
2. Enable participants to properly apply and interpret each of the Y14.5 controls and rules (i. e., how to "encode" and "decode" Feature Control Frames, Datum Features, etc.)
3. Enable participants to *calculate* functional tolerances for position and other tolerances
4. Bring participants to a fundamental understanding of Datum Feature selection, specification and interpretation, as well as proper, and PRACTICAL, Datum Reference Frame construction.
5. Gain a complete understanding of the definitions and the effects of Material Condition Modifiers applied to considered features as well as to datum features, including how to analyze those effects.
6. Prepare the participants for the ASME GDTP certification exams.

Benefits

Your drawings have GD&T on them (or maybe they are supposed to)! If you have been attempting to work with GD&T, and you lack the confidence to specify or are having trouble interpreting the specifications, this course is for you. Using GD&T improperly can be worse than not using it at all! This program is a complete introduction to the Y14.5 standard. In this program we will focus on the "what, when, why and how" of GD&T. The main goal is to bring all participants to a common, basic and operational level of understanding. The course is a thorough introduction to those with a little to a moderate level of experience with GD&T, but you will not be an expert. Complete GD&T training requires more than just a few days

Program Outline

The program begins with a bit of the history of GD&T, then we look at the cost of designing and manufacturing a part. We will compare the "old" methods of dimensioning and Tolerancing to the Y14.5 approach. In this analysis, we will demonstrate the strengths and advantages of GD&T as a design tool, as a manufacturing aid, as a purchasing (estimator) aid, and as an overall communications facilitating tool. We incorporate many practical exercises to enhance learning, and to increase confidence. The subject matter covered is (as a minimum):

- Introduction – Objectives, review of the "old" system versus GD&T
- General rules of dimensioning and drafting per the standard.
- Tolerance Zones – definition, concepts, comparison to existing systems.
- GD&T symbology and definitions of controls – particular emphasis on position tolerancing
- "Bonus" Tolerance – definition and how to take advantage of them
- Datum Reference Frames – definition and proper construction and selection

Who Should Attend

This program is designed for anyone who designs, drafts, engineers, purchases, manufactures, estimates, or inspects parts and assemblies. Particular emphasis is placed on those who design and manufacture, and those responsible for quality.

Prerequisites

A working understanding of technical drawings (perspectives, sections, details, etc.). GD&T Overview and Print Reading suggested.

Continuing Service

At AGI we are particularly concerned that the individuals that we teach actually retain that which their companies and we have worked so hard to present. This concern is precisely why we offer, for each participant of any AGI seminar, access to a senior consultant (usually the instructor of the course) who will be available to answer any follow up questions after the course via telephone or fax.

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