



Fundamentals of GD&T Workshop, based on ASME Y14.5M-1994

Learn how to interpret engineering drawings produced in accordance with the ASME Y14.5M-1994 standard. You will discover the terms, rules, symbols, and concepts of GD&T as prescribed in the standard, as well as gain an in-depth understanding of the geometric symbols, including each symbol's requirements, tolerance zones, and limitations. Numerous practice problems are assigned reinforcing and ensuring you retain the knowledge learned.

Who Should Attend

This course is ideal for individuals who create or interpret engineering drawings including design, layout, assembly, checking and inspection personnel.

Skill Level Needed

Students should have basic print reading skills.

Course Agenda and Highlights

- **Introduction**
GD&T/Coordinate Dimensioning Comparison, Eight Key GD&T Terms
- **Terminology**
GD&T Modifiers and Symbols, Rule #1 and Rule #2, Basic Dimensions, Virtual Condition, Bonus Tolerance
- **Form Controls**
Flatness, Straightness, Circularity, and Cylindricity
- **Datums**
The Datum System, Interpreting Datum Targets, Feature of Size Datum Specifications
- **Orientation Controls**
Perpendicularity, Angularity, Parallelism
- **Tolerance of Position Controls (TOP)**
Definitions, Conventions, Advantages, Basic theories, Axial Relationships, RFS and MMC, TOP Applications, Cartoon Gages for TOP Applications, TOP Special Applications, Calculating Distances on Parts Dimensioned with TOP, Fixed and Floating Fastener Formulas
- **Concentricity and Symmetry Controls**
- **Runout Controls**
Circular Runout, Total Runout
- **Profile Controls**
Profile of a Surface, Profile of a Line

Learning Outcomes

You will learn the benefits of GD&T and leave with the ability to interpret GD&T on drawings. You will gain a thorough understanding of the fundamental concepts of GD&T ensuring you have a solid foundation for understanding more advanced topics.