

# Advanced Concepts of GD&T Workshop

(Based on ASME Y14.5M-1994)

**Course Developer: Alex Krulikowski, President of Effective Training Inc. (ETI)**



Learn geometric dimensioning and tolerancing from the experts. One of ETI's qualified instructors will come to your site to conduct a hands-on workshop on the advanced concepts of GD&T. We provide training at locations around the world, and all of our workshops can be customized to include your drawings and parts.

ETI's training and materials were developed by Alex Krulikowski, the noted GD&T educator, author, and consultant. He has a degree in industrial vocational education and more than 30 years of industrial experience putting GD&T to practical use on the shop floor. Alex is a member of the ASME Y14.5 Committee on Dimensioning and Tolerancing and served as chairman of the Y14.41 Committee on Solid Model Dimensioning for six years, so he's an expert on how to teach GD&T's application as prescribed by the standards. He has helped more than 60,000 students learn GD&T through his textbooks, self-study courses, computer-based training software, and online learning center.

**Learning to interpret and apply GD&T properly will help you and your company:**

- Save money at the design stage
- Enable global sourcing
- Reduce drawing errors
- Increase productivity
- Increase part tolerances
- Assure that mating parts will assemble
- Eliminate scrap
- Improve inspection accuracy

## About the Course

This accelerated course was developed to meet your advanced GD&T needs by building on your existing fundamental skills. You'll learn about advanced GD&T concepts like composite tolerancing, tolerance analysis, datum selection, non-rigid part dimensioning, and many more key dimensioning topics. The course covers a variety of topics from advanced GD&T concepts to the system approach for part dimensioning.

## Who Should Attend

This workshop is a valuable tool for individuals who create or interpret engineering drawings: product and gage designers; process, product, and manufacturing engineers; supplier quality engineers; CMM operators; buyers/purchasers; checkers; inspectors; technicians; and sales engineers.

## Skill Level Needed

Please be aware that this is not an introductory course. In order to understand the course content, you should have:

1. Completed 16 hours of formalized classroom training in GD&T
2. Experience interpreting or applying GD&T in an industrial setting
3. Have a working knowledge of the ASME Y14.5M-1994 Standard

A certificate from the GD&T Trainer Professional Edition or ETI's Fundamentals of GD&T course is acceptable.

## Workshop Highlights

The workshop is based on a series of goals and objectives. It includes numerous practice problems and in-depth coverage of GD&T advanced concepts. You will learn to solve real-world problems; understand datum selection, how to reduce product costs, profile tolerancing, form controls, positional tolerancing, and part calculations. CEUs will be awarded for successful completion of the course.

## Each workshop participant receives:

- A copy of *Advanced Concepts of GD&T*, by Alex Krulikowski
- A *GD&T Ultimate Pocket Guide*
- Class handouts
- An official certificate of completion



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**Quantity discounts available. Call 1-800-886-0909 to enroll today.**

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## Course Topics

- Functional dimensioning
- Rigid / Flexible parts - specification and interpretation
- Restraint notes on non-rigid parts - specification and interpretation
- Restrained part datum system on non-rigid parts
- Form control applications: seal, assembly, support, flatness
- Datum system
- Ten common datum feature types - specification and interpretation
- Datum target applications
- Special datum feature applications: screw threads, gears, splines temporary datum features
- Tolerance of position: modifier usage, loss function curve types, and applications
- Simultaneous and separate requirements for tolerance of position
- Composite position tolerancing
- Multiple single-segment position tolerancing
- Tolerance of position applications with a conical tolerance zone
- Profile controls, three profile myths
- Simultaneous and separate requirements for profile
- Composite profile tolerancing - specification and interpretation
- Multiple single segment profile - specification and interpretation
- Profile applications

All of our workshops can be customized to include your drawings and parts.

### Receive a complete GD&T education.

We have a series of workshops that add up to a total GD&T education:

- Engineering Drawing Requirements
- GD&T Fundamentals
- GD&T Advanced Concepts
- Tolerance Stacks
- Statistical Tolerance Stacks
- GD&T One-Day Overview

### Provide your management with a half-day overview of GD&T.

ETI also provides a half-day executive overview of geometric dimensioning and tolerancing.

### Understand the difference between the ASME and ISO standards.

If you do business internationally, we can train your employees in the differences between the ASME and ISO standards.

### Understand the fundamental definitions, concepts, and methods from the new ASME Y14.41-2003 Standard.

The Y14.41 Standard establishes requirements for preparing, organizing and interpreting 3-D digital product images. ETI's Solid Model Tolerancing course explains the ASME Y14.41 Standard and how to apply it in your organization.

Students who attend our workshops walk away with more than knowledge. They gain on-the-job skills because our materials are performance-based, and each workshop approaches the subject from a design perspective.

For more onsite workshop information—or to request a custom quote package—contact a GD&T account executive at 1-800-886-0909, or email [sales@etinews.com](mailto:sales@etinews.com).

### Need to train a large group?

ETI provides training onsite, online and through the *GD&T Trainer Professional Edition* computer-based training software. Call to learn more about the training option that's right for your company.



[www.etinews.com](http://www.etinews.com)

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