

ADVANCED CONCEPTS OF GD&T

Based on ASME Y14.5M-1994

- 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

Course Objective

This course 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.

Course Description

This accelerated course was developed to meet the student's advanced GD&T needs by building on existing fundamental skills. Students will learn about advanced GD&T concepts such as 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 class 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.

Prerequisites

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



Class Materials

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

Class Structure

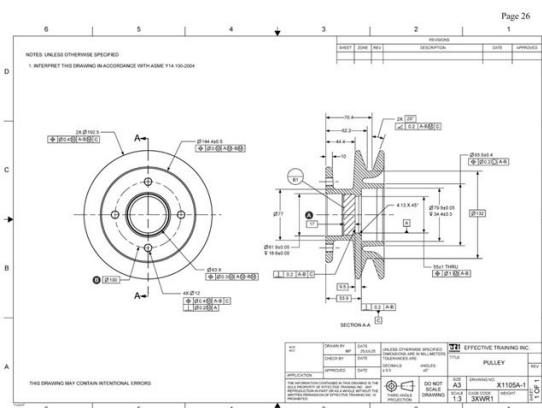
- On-site, instructor-led
- 2 Days of instruction
- Minimum 10 students per class



Course Topics—Advanced Concepts of GD&T

Introduction

- Functional dimensioning
- Rigid / Flexible parts—specification and interpretation
- Restraint notes on non-rigid parts—specification and interpretation
- Retrained 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 suplications: 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



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

The *Fundamentals of GD&T* training materials were developed by Alex Krulikowski, the noted GD&T educator, author and consultant. Alex has more than 30 years of industrial experience putting GD&T to practical use. He 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. Alex is considered an industry expert on teaching GD&T's application as prescribed by the standards. More than 60,000 students have learned GD&T using his methods.