

PROFESSIONAL DEVELOPMENT

MASTERING GEOMETRIC DIMENSIONING & TOLERANCING (GD&T): A COMPREHENSIVE VIRTUAL TRAINING

Presented by Mike Lewis, Lewis DFM Technologies, LLC

Enhance your engineering and manufacturing skills with our comprehensive Geometric Dimensioning & Tolerancing (GD&T) training series. Designed for professionals looking to develop a strong foundation in GD&T principles, this course provides a structured learning path through 12 essential modules. Each 2-hour module builds upon the previous one, ensuring a thorough understanding of GD&T concepts, symbols, rules, and practical applications.

FLEXIBLE AND CONVENIENT

This 24-hour course can be provided either on-site or virtually and based on the clients' scheduling preference and instructor availability.

Why Take This Course?

- Gain a deep understanding of GD&T drawing standards, tolerances, and dimensioning methods.
- Improve design accuracy, manufacturing efficiency, and inspection reliability.
- Learn through real-world applications, quizzes, and interactive discussions.

GD&T MODULE 201: INTRO TO GD&T (Prerequisite: UED 101-104)

- GD&T Drawing Standards
- Tolerances, Dimensions & Notes used on Drawings
- Coordinate Tolerancing vs. GD&T
- General Dimensioning Symbols

GD&T MODULE 202: GD&T FUNDAMENTALS (Prerequisite: GD&T 201)

- Key GD&T Terms
- Symbols and Material Condition Modifiers
- GD&T Rules
- GD&T Concepts

GD&T MODULE 203: FLATNESS & STRAIGHTNESS FORM (Prerequisite: GD&T 202)

- Flatness Tolerance
- Straightness Tolerance
- Review/Discuss GD&T Information Chart
- Review/Discuss GD&T Control Selection Chart
- Review/Discuss Compliance Charts
- Review/Discuss Inspection Methods (Tooling U-SME Animation)
- Review/Discuss “Flange Drawing” GD&T Applications
- Review/Discuss Quiz and Application Problems

GD&T MODULE 204: CIRCULARITY & CYLINDRICITY FORM CONTROL (Prerequisite: GD&T 203)

- Circularity Tolerances
- Cylindricity Tolerances
- Review/Discuss GD&T Information Chart
- Review/Discuss GD&T Control Selection Chart
- Review/Discuss Compliance Charts
- Review/Discuss Inspection Methods (Tooling U-SME Animation)
- Review/Discuss “Flange Drawing” GD&T Applications
- Review/Discuss Quiz and Application Problems

GD&T MODULE 205: DATUM SURFACES AND SIZE DATUMS (Prerequisite: GD&T 204)

- The Datum System
- Datum Targets
- Size Datums, Regardless of Feature Size (RFS)
- Size Datums, Maximum Material Condition (MMC)
- Review/Discuss GD&T Information Chart
- Review/Discuss “Flange Drawing” GD&T Applications
- Review/Discuss Quiz and Application Problems

GD&T MODULE 206: ORIENTATION CONTROL TOLERANCES (Prerequisite: GD&T 205)

- Perpendicularity Tolerances
- Parallelism Tolerances
- Angularity Tolerances
- Review/Discuss GD&T Information Chart
- Review/Discuss GD&T Control Selection Chart
- Review/Discuss Compliance Charts
- Review/Discuss Inspection Methods (Tooling U-SME Animation)
- Review/Discuss “Flange Drawing” GD&T Applications
- Review/Discuss Quiz and Application Problems

GD&T MODULE 207: INTRODUCTION TO POSITION TOLERANCES (Prerequisite: GD&T 206)

- Position Tolerance Introduction
- Position Tolerances at Regardless of Feature Size (RFS)
- Position Tolerances at Maximum Material Condition (MMC)
- Review/Discuss GD&T Information Chart
- Review/Discuss GD&T Control Selection Chart
- Review/Discuss Compliance Charts
- Review/Discuss Inspection Methods (Tooling U-SME Animation)
- Review/Discuss “Flange Drawing” GD&T Applications
- Review/Discuss Quiz and Application Problems

GD&T MODULE 208: POSITION TOLERANCE APPLICATIONS (Prerequisite: GD&T 207)

- Position Tolerance Special Applications
- Position Tolerance Calculations
- Position Tolerances at Maximum Material Condition (MMC)
- Review/Discuss GD&T Information Chart
- Review/Discuss GD&T Control Selection Chart
- Review/Discuss Compliance Charts
- Review/Discuss Inspection Methods (Tooling U-SME Animation)
- Review/Discuss “Flange Drawing” GD&T Applications
- Review/Discuss Quiz and Application Problems

GD&T MODULE 209: ADVANCED CONCEPTS, POSITION TOLERANCES (Prerequisite: GD&T 208)

- Inspection Techniques for Position Tolerances
- Paper Gaging Pattern Locations
- Pattern Locating Tolerance Zones (PLTZ)
- Feature Locating Tolerance Zones (FLTZ)
- Review/Discuss GD&T Information Chart
- Review/Discuss GD&T Control Selection Chart
- Review/Discuss Inspection Methods (Tooling U-SME Animation)
- Review/Discuss “Flange Drawing” GD&T Applications
- Review/Discuss Quiz and Application Problems

GD&T MODULE 210: RUNOUT, CONCENTRICITY AND SYMMETRY (Prerequisite: GD&T 209)

- Circular and Total Runout Tolerances
- Concentricity Tolerances
- Symmetry Tolerances
- Review/Discuss GD&T Information Chart
- Review/Discuss GD&T Control Selection Chart
- Review/Discuss Compliance Charts
- Review/Discuss Inspection Methods (Tooling U-SME Animation)
- Review/Discuss “Flange Drawing” GD&T Applications
- Review/Discuss Quiz and Application Problems

GD&T MODULE 211: PROFILE TOLERANCES (Prerequisite: GD&T 210)

- Profile Tolerance Basic Concepts
- Profile Tolerance Applications
- Review/Discuss GD&T Information Chart
- Review/Discuss GD&T Control Selection Chart
- Review/Discuss Compliance Charts
- Review/Discuss Inspection Methods (Tooling U-SME Animation)
- Review/Discuss “Flange Drawing” GD&T Applications
- Review/Discuss Quiz and Application Problems

GD&T MODULE 212: OPTIMIZING DESIGN USING GD&T (Prerequisite: GD&T 211)

- Determine Functionality of the Product
- Design the Product to Guarantee Functionality
- Select Datums that Replicate Functionality
- Select Geometric Control that Replicates Functionality
- Determine Impact of MMC vs. RFS on Functionality, Manufacturing & Assembly
- Determine if Functional Gaging will be used in Manufacturing & Assembly