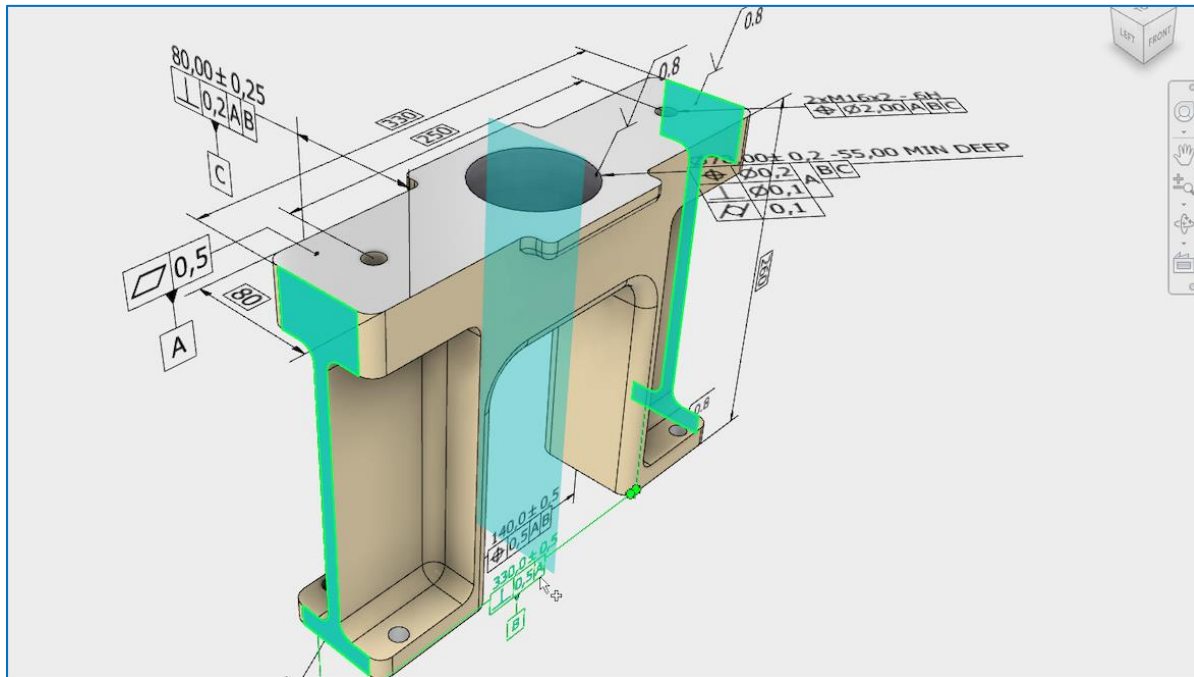




GE055: Geometric Dimensioning and Tolerancing (GD&T) – Practical Application & Interpretation

Training Description:

This five-day intensive training course provides comprehensive knowledge and hands-on application of Geometric Dimensioning and Tolerancing (GD&T) based on the **ASME Y14.5 standard**. The training course aims to enhance understanding of engineering drawings and improve precision, communication, and manufacturing consistency. Participants will gain the skills to interpret, apply, and inspect GD&T symbols and controls for design and quality assurance.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Understand the purpose and benefits of GD&T in manufacturing and inspection
- ✓ Interpret symbols, feature control frames, and datum systems per ASME Y14.5
- ✓ Apply GD&T to real-world design and inspection scenarios
- ✓ Analyze functional relationships between features and tolerances
- ✓ Improve collaboration between design, engineering, and quality teams using a common symbolic language

Training Designed for:

This training course is intended for Design Engineers, Manufacturing Engineers, Quality Assurance Engineers, Product Development Engineers, Inspectors and Quality Technicians and Anyone involved in interpreting or creating technical drawings.

Training Requirement:

“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

- ❖ Introduction to GD&T and Symbol Fundamentals
 - Overview of Dimensioning & Tolerancing Concepts
 - History and Purpose of GD&T
 - Benefits Over Traditional Tolerancing
 - Drawing Standards: ASME Y14.5
 - Basic GD&T Symbols and Terminology
 - Feature Control Frame Structure
 - Types of Features (Individual vs Related)
- ❖ Practical Exercise: Identifying GD&T symbols in sample engineering drawings

DAY TWO:

- ❖ Datums and Feature Control Frames
 - What are Datums? Datum Reference Frames Explained

- Datum Targets and Simulators
- Constructing a Datum Reference Frame
- Establishing Datum Order of Precedence
- How to Read and Interpret Feature Control Frames
- Controlling Straightness, Flatness, Circularity, Cylindricity

❖ **Practical Exercise:** Creating Datum structures and interpreting control frames on parts

DAY THREE:

❖ **Orientation and Profile Controls**

- Orientation Controls: Perpendicularity, Angularity, Parallelism
- Introduction to Profile Tolerances (Line/Profile of a Surface)
- Profile Applications for Complex Shapes
- Bonus Tolerance, Virtual Condition, and Material Condition Modifiers (MMC, LMC, RFS)
- When and How to Apply Profile Controls

❖ **Hands-on Activity:** Applying profile tolerances to sample components with varying shapes

DAY FOUR:

❖ **Location and Runout Controls**

- Location Tolerances: Position, Concentricity, Symmetry
- True Position Tolerance: Calculations and Applications
- Projected Tolerance Zones
- Introduction to Runout Controls: Circular and Total Runout
- Composite Tolerancing
- Tolerance Stacking Basics

❖ **Workshop:** Calculating and interpreting true position and composite tolerancing examples

DAY FIVE:

❖ **Inspection, Application and Case Studies**

- GD&T in Inspection & Metrology
- Using CMMs and Gauges for GD&T Measurements
- Case Studies from Manufacturing & Quality
- Common GD&T Mistakes and Misinterpretations
- Drawing Review & GD&T Redesign Workshop

❖ **Q&A**

❖ **Group Exercise:** Review a real-world drawing, apply corrections using GD&T principles, and present solutions

❖ **POST-ASSESSMENT and EVALUATION**

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

TBA as per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:

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