OUTSOURCING TRAINING & CONSULTING
OTC Training Centre Sdn Bhd

HRD awards 2022 TRAINING PROVIDER

REGISTER 3 PAX, FREE 1 SEAT

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Awarded by Suruhanjaya Tenaga

100% HRDC CLAIMABLE

GEOMETRIC DIMENSIONING AND TOLERANCING (GD&T)

14 Hours ZOOM & PHYSICAL Program

HYBRID TRAINING

2 & 3 Nov 2026 (Mon & Tue)

Remote Online Training (Zoom) &
Dorsett Grand Subang Hotel, Selangor (Physical)
** Choose either Zoom OR Physical Session

LEARNING OBJECTIVE:

At the conclusion of this 2 days program, participants will be able to:

- Gain knowledge on what GD&T is all about
- Explain the benefits of geometric tolerancing
- Learn how to apply GD&T in their job
- Able to interpret customers requirements from the design drawing
- Understand the problems in manufacturability
- Be reminded of the Do's & Don't's of proper tolerancing
- Able to set quality control criteria from design drawing
- Identify datum features and determine their order of precedence
- Identify and interpret each of the characteristic symbols
- Describe the material condition modifiers and how "bonus" tolerance occurs
- Correctly interpret GD&T feature control frames, and explain the impact on manufacturing and inspection

INTRODUCTION:

Geometric dimensioning and tolerancing (GD&T) is a language used on mechanical engineering drawings composed of symbols that are used to efficiently and accurately communicate geometry requirements for associated features on components and assemblies. GD&T is, and has been, successfully used for many years in the automotive, aerospace, electronic and the commercial design and manufacturing industries.

Success oriented industries and organizations which, require accurate and common lines of communications between engineering, design, manufacturing and quality should consider geometric dimensioning and tolerancing (GD&T) as their mechanical drawing standard.

METHODOLOGY:

- The workshop is a mixture of presentation with personal examples, videos, assessment, discussions and group activities.
- Practical activity on drawing interpretation and measurement methods will be given throughout the training for better understanding.

INTENDED AUDIENCE

- This 2 days workshop has been designed for Engineers, Supervisors, Technicians, Inspection & Measurement Technicians and Production staff who are involved in design, measurement and production of mechanical parts.
- This course is designed for personnel whose work requires them to communicate, interpret or manufacture products through the use of engineering drawings and/or CAD models.
- Also those communicating constantly with customers for new parts/molds manufacturing.
- Participants should have an understanding of basic blueprint reading.

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COURSE CONTENT

Day 1: 9am - 5pm

1. Introduction to GD&T
i. Limitations of coordinate tolerancing
ii. Advantages of GD&T
iii. Exercise 1

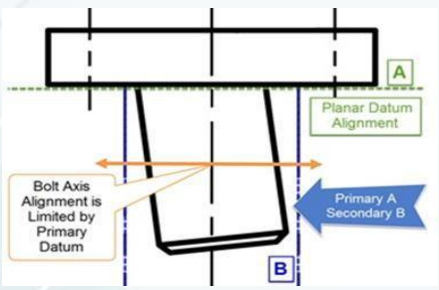
2. Standards
i. Latest GD&T revision & governing body
ii. Exercise 2

3. Dimensioning & tolerancing fundamentals
i. Basic dimension
ii. Critical dimension
iii. Reference dimension
iv. Feature control frame
v. Exercise 3

4. Common symbols used in GD&T
i. New symbols from rev 2009 Y14.5
ii. Exercise 4

5. Rules for drawing & design
i. Rule #1
ii. Rule #2
iii. Bonus Tolerance
iv. GD&T applied to a feature of size
v. Bonus and the MMC modifier
vi. Virtual condition
vii. Gauging and inspection using GD&T
viii. Exercise 5

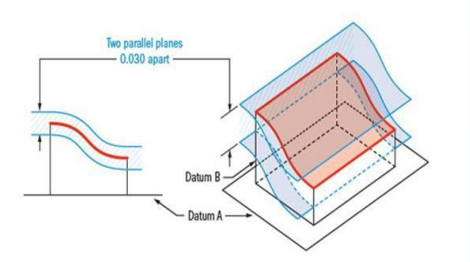
6. Datums
i. Datum vs. datum feature
ii. The datum reference frame
iii. Primary, secondary, and tertiary datums
iv. Exercise 6



Day 2: 9am - 5pm

7. Forms
i. Straightness
  a) Straightness Brief
  b) Line Element Straightness
  c) Design
  d) Tooling / production
  e) Inspection
ii. Flatness
  a) Flatness Brief
  b) Surface Flatness
  c) Design
  d) Tooling / production
  e) Inspection
iii. Roundness
iv. Cylindricity
v. Exercise 7

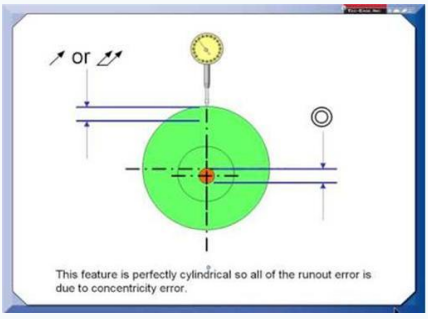
8. Profiles
i. Line profile
ii. Surface profile
iii. Exercise 8



9. Orientation
i. Angularity
ii. Perpendicularity
iii. Parellelism
iv. Exercise 9

10. Location
i. Position
  a) True position
  b) Position tolerance RFS
  c) Using MMC or LMC
  d) The "boundary" concept
  e) The pitch diameter rule
ii Symmetry
iii Concentricity
iv Exercise 10

11. Runout
i. Circular runout
ii. Total runout
iii. Exercise 11



12. Common issues/ errors faced
i. Exercise 12