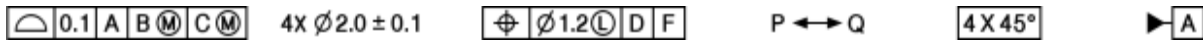# AXYMETRIX Quality Engineering Inc.

COORDINATE METROLOGY | GEOMETRIC DIMENSIONING AND TOLERANCING

Public GD&T Training Event - Langley, BC, June 2023

Course: Geometric Dimensioning &Tolerancing Fundamentals

Location: RCABC Building – Boardroom South
9734 – 201 Street, Langley, BC V1M 3E8
(Golden Ears Bridge area)

Dates: June 6 & 8, 2023 (2 day course, Tuesday and Thursday)

Time: 8:00 AM to 4:00 PM each day

Includes course notes, exercises, example drawings, and refreshments!

Do you need to work with GD&T specifications that follow ASME standards?

4X Ø2.0 ± 0.1   P ⟷ Q   4 X 45°

Learn from an approved ASME Educator and Senior Level Certified GD&T Professional!

EDUCATOR
ASME

ASME
GDTP
Senior

Email **ejaneshewski@axymetrix.ca** or call **604-612-2996** to register.
Space is limited, so register early to save your spot!
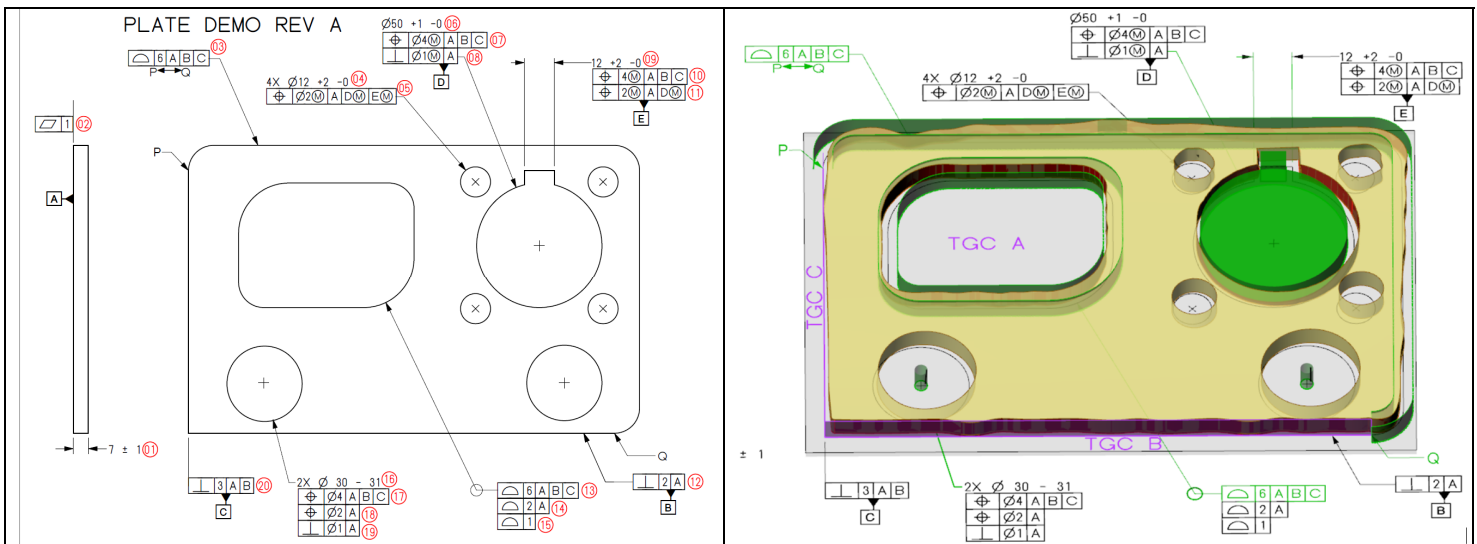
Course Overview

- The course uses a visual and context-based approach to applying GD&T per the ASME Y14.5-2018 standard
- Core GD&T concepts of features, tolerance zones, and alignments are shown in context using actual part examples
- Learn a step-by-step procedure for unpacking the information in GD&T specifications
- Take advantage of modern 3D model-based approaches to GD&T as well as traditional 2D drafting-based methods
- This 2-day fundamentals course is ideal for design, manufacturing, quality assurance, inspection, procurement, and management personnel who need a detailed understanding of drawings involving geometric tolerancing.

www.axymetrix.ca

About the Instructor

Evan Janeshewski is an ASME certified Senior Level GD&T Professional and is vice chairman of the ASME Y14.5.1 and Y14.45 standards committees for Mathematical Definition of GD&T and Measurement Data Reporting. Evan founded Axymetrix in 2001 and has enjoyed teaching GD&T at a wide variety of companies in Canada and the US for more than 20 years.

GD&T Fundamentals - Course Syllabus

- Purpose of GD&T
- Dimensioning and Tolerancing Standards
- Fundamental Concept of Geometric Tolerancing
- Tolerance Zones, Controlled Entities and Alignments
- Profile Tolerances
- Basic Dimensions and Model-Based Definition
- Grouping and Patterns
- Size Tolerances and Actual Mating Envelopes
- Differences between GD&T and Plus/Minus Tolerances
- Actual Values and Measurement Data Reporting
- Datums and Datum Reference Frames
- Degree of Freedom Constraint and Precedence
- Position Tolerances
- Material Conditions and Modifiers
- Bonus Tolerance Calculations
- Virtual Condition and Functional Gauging
- Orientation, Form, and Runout Tolerances
- Simultaneous and Separate Requirements
- Datum Targets
- Comparison of Geometric Characteristics

Course Highlights and Learning Outcomes

After successful completion of the course, students will be able to do the following:
- Read GD&T drawings per the ASME Y14.5-2018 standard
- Apply a step-by-step procedure to unpack the information coded into feature control frames
- Understand tolerance requirements in the context of actual part geometry
- Describe tolerance zones for various geometric tolerance types
- Understand the role of alignments and constraints
- Understand the role of the CAD model and basic dimensions in GD&T
- Understand the differences between geometric tolerancing and plus/minus tolerancing
- Describe inspection options including templates, hard gages, dial indicators, and CMM's
- Understand the required and supplemental information in GD&T inspection reports
- Go on to advanced GD&T courses in design, quality and inspection, and tolerance stackup

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Materials Included with Course

Each participant receives the following:
- Course manual
- Exercises
- Example drawings, handouts, templates and overlays
- Certificate of Completion
- Lunches and snacks each day

Registration	Contact Information
<u>Course Registration Fee</u>: $800.00 + GST per person Ask about volume discounts for 5 or more registrations from the same company.	Evan Janeshewski Email: ejaneshewski@axymetrix.ca Tel: (604) 612-2996