



DEFENSE ACQUISITION UNIVERSITY
CMQ 242 - Measuring Techniques

171219

*Course Learning/Performance Objectives followed by its
enabling learning objectives on separate lines if specified.*

1	Given technical drawings, interpret common drawing features, including dimensions, datums, tolerances, and other special features, as each applies to Geometric Dimensioning and Tolerancing (GD&T)
	Interpret dimensions, datums, tolerances, and special features of technical drawings. Given a scenario, a part, and its associated technical drawing, correctly orient the part to apply Geometric Dimensioning and Tolerancing (GD&T).
2	Given a scenario and a technical drawing of a part, measure characteristics of tolerance types, as applied to Geometric Dimensioning and Tolerancing (GD&T), including: • Flatness and Straightness • Circularity and Cylindricity • Angularity and Perpendicularity • Parallelism • Position • Concentricity • Symmetry • Profile of a Line and Surface • Circular and Total Runout
	Identify considerations when measuring Form tolerances, as applied to Geometric Dimensioning and Tolerancing (GD&T), including procedures, tools, and variables.
	Identify considerations when measuring Orientation tolerances, as applied to Geometric Dimensioning and Tolerancing (GD&T), including procedures, tools, and variables
	Identify considerations when measuring Profile tolerances, as applied to Geometric Dimensioning and Tolerancing (GD&T), including procedures, tools, and variables.
	Identify considerations when measuring Runout tolerances, as applied to Geometric Dimensioning and Tolerancing (GD&T), including procedures, tools, and variables.
	Identify considerations when measuring Location tolerances, as applied to Geometric Dimensioning and Tolerancing (GD&T), including procedures, tools, and variables.
	Differentiate between the differential, direct, and transfer measuring methods as applied to Geometric Dimensioning and Tolerancing (GD&T).
	Recognize the considerations required when selecting a measurement method as applied to Geometric Dimensioning and Tolerancing (GD&T).
	Distinguish between the tools used in each measurement method as applied to Geometric Dimensioning and Tolerancing (GD&T).
	Demonstrate how to properly use analog and digital scales.
	Demonstrate how to properly use analog and digital gages.
	Differentiate between the differential, direct, and transfer measuring methods as applied to Geometric Dimensioning and Tolerancing (GD&T).
	Measure the characteristics of Form tolerances, including flatness and straightness, and circularity and cylindricity.
	Measure the characteristics of Orientation tolerances, including angularity and perpendicularity, and parallelism.
	Measure the characteristics of Location tolerances, including position, concentricity, and symmetry
	Measure the characteristics of Profile tolerances, including line and surface.
	Measure the characteristics of Runout tolerances, including circular and total.
	Measure the characteristics of Maximum Material and Least Material Conditions.
Demonstrate the tools and procedures used for measuring Surface Finish.	