Syllabus for the GD&T Basics Fundamentals Course

Section 1: Introduction
- Course Introduction – Why This Course is Different
- What is GD&T?
- Terminology & Basic Rules

Section 2: Features and Rules of GD&T
- Intro to Features and Material Conditions
- Rule #1 of GD&T (Envelope Principle)
- Maximum Material Condition (M)
- Least Material Condition (L)
- Regardless of Feature's Size & Rule #2
- The Feature Control Frame \( \perp \theta 0.2 A \bar{B} \)

Section 3: Datums Control
- Intro to Datums
- Datum Reference Frame
- Primary Datum Controls
- Datum Targets
- Intro to MMB and LMB

Section 4: Adding GD&T to a Design
- SLOF for Drawings (Size, Location, Orientation & Form)
- Choosing Datums
- Virtual Condition Calculations

Section 5: Form Tolerances
- Straightness (Surface)
- Straightness (Derived Median Line)
- Flatness (Surface)
- Flatness (Derived Median Plane)
- Circularity
- Cylindricity
Section 6: Orientation Tolerances
- Parallelism (Surface)
- Parallelism (Axis)
- Perpendicularity (Surface)
- Perpendicularity (Axis)
- Angularity (Surface and Axis)

Section 7: Profile Tolerances
- Profile of a Surface - Basics
- Profile In-Depth (Modifiers)
- Profile of a Line

Section 8: Location Tolerances
- True Position – Basics
- Position – In-Depth
- Intro to Functional Position Gauging
- Why Use Position Over Coordinate Dimensions
- Concentricity
- Symmetry

Section 9: Runout Tolerances
- Runout/Circular Runout
- Total Runout