Syllabus for the GD&T Advanced Course

Section 1: Introduction
- Introduction – Goals of the Course
- Advanced Material – What we are Covering
- List of ALL GD&T Symbols (Online Page)

Section 2: Envelopes and Tolerance Boundaries
- Envelopes & Boundaries
- Virtual Condition & Calculations
- Resultant Condition & Calculations

Section 3: Datums In-Depth
- Datum vs Datum Feature vs Datum Feature Simulators
- Simultaneous Requirements
- Patterns as Datums
- Non-Rectangular & Irregular Datums

Section 4: Datum Application & Measurement
- Material Boundaries & Datum Shift
- Datum Translation, Movable Targets, & Custom DRF
- Functional Gauge Considerations
- Position In-Depth Part II (Continued from Fundamentals Course)

Section 5: Composite Tolerances
- Composite Tolerances – Single Datum
- Composite Tolerances – Multiple Datum
- Multiple Single Segment Tolerances
- Composite Profile Tolerances
Section 6: Additional Features, Rules and Symbols
- Advanced Profile Concepts
- Hole Processes (Counterbore/Countersink)
- Blueprint Symbols in ASME Y14.5
- Taper, Slope, Square & Keyseats
- Machined Feature Rules – (Kurling, Threads, & Gears)
- Specific Use GD&T Symbols

Section 7: Special Application Calculations
- Projected Tolerances
- Fixed Fasteners
- Floating Fasteners
- 0 Tolerance at MMC

Section 8: Geometric Tolerance Stack-Up
- RFS Wall Thickness Boundary Calculations
- Practice Application – RFS Tolerance Calculation Example
- MMC & LMC Positional Tolerance Stack-up
- Practice Application – MMC Tolerance Calculation Example
- Tolerance Impact of Datum Surfaces (Orientation, & Form)
- Practice Application – Datum Surface Tolerance Calculation

Section 9: ASME Y14.5 GDTP Senior Certification Prep
- ASME GDTP Certification Overview
- Organization of the Exams and How to study
- GD&T Master Guide (Handout Resource)

Section 10: Bringing It All Together
- Referencing and Using the ASME 14.5 Standard
- Course Conclusion

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