Quality Core Tools Course Outline

1. Advanced Product Quality Planning (APQP)
   - Five APQP Phases for quality planning and the tools associated with each phase
   - Implementation and scaling of APQP
   - Use of APQP activity checklists
   - APQP Deliverables with emphasis on PPAP elements
   - Control plan Development
   - Team feasibility commitment

2. Failure Mode and Effect Analysis (FMEA)
   - Where FMEA fits in APQP
   - Design FMEA Overview
   - Design FMEA Outputs
   - Relationship between Design FMEA and Process FMEA
   - Special Characteristics Development and Management
   - Process Flow Chart
   - Process FMEA (PFMEA) Overview
   - Process FMEA Outputs
   - Relationship of Process FMEA to Control Plans

3. Production Part Approval Process (PPAP)
   - When submission is required
   - Requirements for part approval
   - Submission levels
   - Process requirements and items
   - Record and sample retention
   - Part submission status

4. Basic Statistical Process Control (SPC)
   - Introduction to SPC
   - Sampling and data collection
   - Variable and Attribute Data
   - Central Tendency, Range and Standard Deviation
   - Variable and Attribute Control Charts

5. Measurement System Analysis (MSA)
   - General measurement systems guidelines
   - Methods for assessing measurement systems effectiveness
   - Calibration requirements including traceability
   - Analysis of a measurement system Gage Repeatability & Reproducibility (GR&R)
   - Measurement of gage performance

6. Special Characteristics
   - Selection of characteristics that are special using DFMEA
   - Characteristics Matrix
   - Process FMEA requirements for Special Characteristics
   - Requirements for Special Characteristics in PPAP
   - Gage R&R and SPC on Special Characteristics