APEX QUALITY ASSURANCE

5-Day (40 CPD Hours)

# Understanding Core Tools APQP, PPAP, PFMEA, Control Plans, SPC & MSA Training

## Aerospace Quality Management Systems

**Register by phone**

919-635-5581

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www.apexqualityassurance.com

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# At A Glance

## Aerospace Quality Management Systems

This intensive 5-day (40 CPD-hour) seminar gives participants a complete grounding in the essential "core tools" used in new product development and quality-assurance processes. You'll gain a solid grasp of the following:

- APQP (Advanced Product Quality Planning) and the five phases necessary to guide a product from concept through production launch.
- PPAP (Production Part Approval Process) — what's required to validate and approve parts before full-scale manufacturing begins.
- PFMEA (Process Failure Mode & Effects Analysis) and how to build robust Control Plans to identify, analyze, and mitigate potential process failures before they occur.
- SPC (Statistical Process Control) — statistical methods to monitor, control, and improve manufacturing processes in real time.
- MSA (Measurement Systems Analysis) — evaluating and controlling variation in measurement systems to ensure accuracy and consistency.

Over the course of this training, you'll learn how to integrate these tools into a unified quality-management framework — enabling your team to plan effectively, minimize risks, assure part quality, maintain process control, and ensure reliable measurement.

# Who Should Attend

## Aerospace Quality Management Systems

This training is designed for anyone involved in product development, manufacturing, or quality management who needs a strong working knowledge of the Core Tools. It's especially valuable for quality engineers, process engineers, manufacturing engineers, project managers, and production supervisors responsible for planning, validating, or controlling new or existing processes.

Supply-chain and supplier-quality professionals who oversee part approval and ongoing supplier performance will benefit from the structured approach taught through APQP and PPAP. Internal auditors, QA/QA managers, and team members preparing for IATF 16949 compliance will also find this course essential.

This training is equally suited for organizations onboarding new staff who need foundational Core Tools knowledge, as well as experienced personnel who require a deeper, more integrated understanding of APQP, PPAP, PFMEA, Control Plans, SPC, and MSA.

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# Seminar Outline

## Aerospace Quality Management Systems

**Day 1: Advanced Product Quality Planning (APQP) and Production Part Approval Process (PPAP)**

- The first day introduces the foundational elements of quality planning. Participants will learn about:
- Advanced Product Quality Planning (APQP): Understanding the five phases of APQP for New Product Development and its crucial relationship to program management. This includes developing the knowledge and skills needed to effectively participate as an APQP team member.
- Production Part Approval Process (PPAP): Understanding the PPAP protocol, its essential elements, required deliverables, and the proper submission and approval process to ensure all customer engineering design record and specification requirements are consistently met.

**Days 2 and 3: Process Failure Mode and Effects Analysis (PFMEA) and Control Plans**

- The two middle days are dedicated to process risk analysis and control. Participants will focus on:
- Process Failure Mode and Effects Analysis (PFMEA) and Control Plans: Learning how to achieve robust and comprehensive process control, process standardization, and continuous process improvement. This involves using tools like Process Flow Diagrams, conducting thorough PFMEA to anticipate and mitigate failures, and developing effective Process Control Plans.

**Day 4: Statistical Process Control (SPC)**

- The fourth day focuses on using statistical methods to manage process variation. Participants will learn:
- Statistical Process Control (SPC): Understanding the use of SPC techniques to actively monitor and measure variation in manufacturing processes. This training is essential for learning how to identify and implement corrective actions where process problems arise.

**Day 5: Measurement Systems Analysis (MSA)**

- The final day covers the critical topic of ensuring data reliability. Participants will learn about:
- Measurement Systems Analysis (MSA): Understanding the principles of MSA and the statistical tests employed to determine measurement variation and measurement uncertainty. This is key for the effective management and validation of all measurement systems used in production.

*Attendees successfully completing the examinations provided in conjunction with this course receive a Certificate of Completion from APEX Quality Assurance as well as 40 hours' worth of CPD credits.*