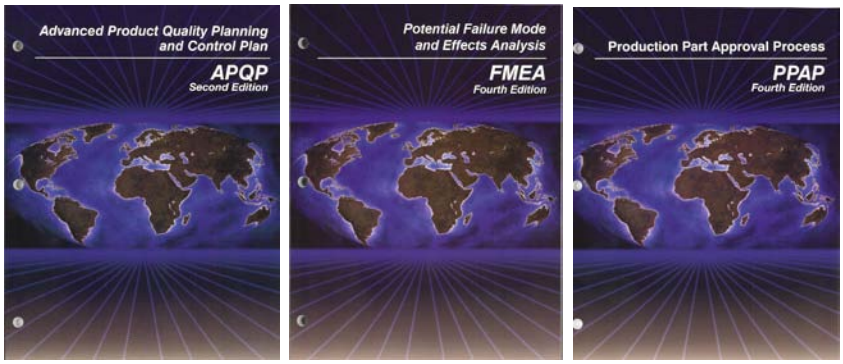
THE CENTER FOR
PROFESSIONAL STUDIES



Advanced Product Quality Planning (APQP), Failure Mode and Effects Analysis (FMEA) and Production Part Approval Process (PPAP)

A quality process driven organization has a consistent standardized process in planning to deliver projects to stated quality standards. Having this system established, understood and utilized creates a real differentiating factor in the marketplace which delivers projects efficiently with comprehensive quality based documentation, tools and techniques.

These Advanced Product Quality Process (APQP) and Production Part Approval Process (PPAP) processes have been developed by the Automotive Industry Action Group (AIAG) to outline a common process and documentation procedure for their supply base. It is widely utilized in the automotive industry and has expanded into the heavy truck and transportation segments and finding its way into other product development markets.

Participants will bring information on specific company projects to be worked on during this training for real application of these concepts, tools and techniques.

- First, the basics of APQP and PPAP are discussed to gain a common understanding of the standard practices, tools and techniques that are utilized in multiple industries.

- Next, participants will focus on gaining an understanding of the standard practices, tools and techniques that are applied. Computer Aided Design (CAD), Computer Aided Engineering (CAE), Geometric Dimension and Tolerancing (GD&T), Process Flow Charting, Fishbone Analysis, Failure Mode and Effects Analysis (FMEA), and Control Plans are reviewed.

- Lastly, participants will apply these tools on specific company projects and apply this into the Production Part Approval Process (PPAP).

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Course Syllabus

I IDENTIFYING INFORMATION

Course:	Advanced Product Quality Planning (APQP), Failure Mode and Effects Analysis (FMEA) and Production Part Approval Process (PPAP)
Prerequisite:	Understanding of the vehicle product development process Understanding of basic product and manufacturing engineering
Time Frame:	40 total contact hours
Instructor:	Daryl Patrishkoff, PMP Chief Executive Officer, CPS BS in Vocational Industrial Education MA in Business Management 30 years in the product design engineering profession 20 years managing sales, operations & plant business units
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II REFERENCE MATERIALS

1. Advanced Product Quality Planning and Control Plan, 2nd Edition by AIAG
2. Potential Failure Mode and Effects Analysis, 4th Edition by AIAG
3. Production Part Approval Process, 4th Edition by AIAG
4. Measurement Systems Analysis, 3rd Edition by AIAG
5. Statistical Process Control, 2nd Edition by AIAG
6. The Basics of FMEA, 2nd Edition by Robin McDermott

III COURSE GOALS AND OBJECTIVES

1. Understanding of the APQP process and documentation
2. Understanding of the FMEA process and documentation
3. Understanding of the PPAP process and documentation
4. Application of the APQP process in practice
5. Application of the FMEA process in practice
6. Application of the PPAP process in practice
7. Development of APQP documentation on a real project
8. Development of FMEA documentation on a real project
9. Development of PPAP documentation on a real project

IV METHODOLOGY

This course is a micro view of the Advanced Product Quality Planning (APQP), Failure Mode and Effects Analysis (FMEA) and Production Part Approval (PPAP) processes, dealing with detailed interpretation of meanings and applications as applied to executing company projects. Each module will introduce new material that will prepare the student for the projects to be completed.

Lectures

Each detailed subject will be presented in a lecture format outlining the theory and standardized accepted methodology. A PDF file of the lecture material will be provided for the student's personal use as reference material. Lecture note outlines will be distributed to the students for each lecture to help the student capture personal notes. A short video showing the concept covered and a discussion regarding application.

Specific Industry Examples

Real life industry examples will be covered that detail out the application of the theory to demonstrate how different companies apply these tools and techniques. This will give the students a clear understanding of how and why these techniques are utilized at different companies and industries in different manners.

In-Class Assignments

Using the theory and industry examples the student will conduct several projects that outline each key principal on in-class projects. These projects will increase in complexity as the students further develop their skills in applying these tools and techniques. The students will present their work to the group for review and discussion.

Specific Company Application

As a summary of the training we will apply these tools and techniques on a specific company project that is currently in development by the students. This will build a standard methodology on how to appropriately apply the Advanced Product Quality Planning (APQP), Failure Mode and Effects Analysis (FMEA) and Production Part Approval Process (PPAP) at your company.

V COURSE OUTLINE & ASSIGNMENTS

Module 1

Advanced Product Quality Planning (APQP)	PowerPoint lecture
Overview Production Part Approval Process (PPAP)	PowerPoint lecture
Industry Examples	PowerPoint lecture
In-Class Assignment, APQP	Complete & present
Group Project	PowerPoint lecture

Module 2

Overview CAD	PowerPoint lecture
Overview CAE	PowerPoint lecture
Overview GD&T	PowerPoint lecture
APQP Industry Examples	PowerPoint lecture
In-Class Assignment, technical documentation	Complete & present

Module 3

Overview Flow Charting	PowerPoint lecture
In-Class Assignment, flow charting	Complete & present
Overview Fishbone Analysis	PowerPoint lecture
In-Class Assignment, fishbone analysis	Complete & present

Module 4

Overview Design and Process FMEA	PowerPoint lecture
In-Class Assignment, design and process FMEA	Complete & present
Overview Control Plans	PowerPoint lecture
In-Class Assignment, control plans	Complete & present

Module 5

APQP Final Document	PowerPoint lecture
FMEA Final Document	PowerPoint lecture
PPAP Final Document	PowerPoint lecture
Company Specific Group Projects	Complete & present