

## Training Catalog 2021/ 2022



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*"20 years of Quality engineering Tool Teaching with passion"*

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# Q1 MSA

Q1 = Quality recognition status by Ford  
MSA = Manufacturing Site Assessment

## Target Audience:

- Employees of all levels and areas, particularly product development, manufacturing, logistics and quality, with responsibility for product quality, process planning, service or part release activities.
- Experienced employees & newcomers, who want to gain an overview of the requirements to attain or maintain the quality recognition status by Ford.

**Duration:** Classroom 8h, Online 6h

## Objectives:

At the end of the course delegates will have an overview about:

- Basic prerequisites necessary to achieve part release submission level 1 (self-certifying).
- Related requirements as well as scoring system which rates the supplier site.

## Contents:

- Q1 definition and benefits of a Q1 certified supplier site
- Q1 eligibility aspects
- Q1 categories and related metrics
- Q1 scoring system (point awarding within the Q1 categories)
- Customer endorsement to attain Q1 status
- Q1 codes
- Contents of Q1 MSA (**M**anufacturing **S**ite **A**ssessment)

## Methods:

Presentation, examples, exercise, interactions and discussions

## Prerequisites:

none

## Necessary materials:

Pocket calculator

## Notes:

Open courses (internal and external delegates) will be held at Ford locations. Furthermore, courses can be ordered in German or English language on-site.

2021 / 2022

## Q1 MSA Training

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 Classroom Training

 modulare 2h Online Live Seminars (coherent) 6h in total

# APQP/PPAP Requirements

APQP = **A**dvanced **P**roduct **Q**uality **P**lanning  
 PPAP = **P**roduction **P**art **A**pproval **P**rocess

## Target Audience:

- Employees at all levels and from all areas (internal and suppliers) – especially from Product Development, Manufacturing, Purchasing and Quality – who are responsible for quality of products, capacity, services and production part release activities.
- Experienced employees & newcomers wishing to gain an overview of automotive quality requirements.

**Duration:** Classroom 8h, Online 6h

## Objectives:

At the end of the course delegates will have an overview about:

- The collectivity of all Ford requirements to the Suppliers in scope of new product and / or production development.

## Contents:

- Background, history, and philosophy of ISO/TS 16949 / IATF 16949,
- Contents of "AIAG 6-Pack",
- Benefit and use of a well-engineered advanced quality planning,
- Structure and contents of vehicle project management,
- Structure and contents of system- and subsystem project management,
- Overview of quality and capacity requirements to be applied in scope of product- and/or process development,
- Meaning and contents of these quality and capacity requirements especially of all Deliverables and related Expectations of Ford's APQP reporting tool "Schedule A",
- Responsibilities and target dates,
- Dependences and relationships amongst these quality requirements.

## Methods:

Presentation, examples, project work, and discussions

## Prerequisites:

None

## Necessary materials:

None

## Notes:

Open courses (internal and external delegates) will be held at Ford locations. Furthermore, courses can be ordered in German or English language on-site.

2021 / 2022

## APQP Training

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  Classroom Training

  modulare 2h Online Live Seminars (coherent) 6h in total

# GPDS Supplier Engagement Process Schedule A / eAPQP / Sub-Tier Supplier APQP

GPDS = Global Product Development System  
eAPQP = electronic Advanced Product Quality Planning

## Target Audience:

- Employees at all levels and from all areas (internal and suppliers) – especially from Product Development, Manufacturing, Purchasing and Quality – who are responsible for quality of products, services and production part release activities.
- Experienced employees & newcomers who want to understand Ford's requirements regarding APQP/PPAP readiness status reporting.

**Duration:** Classroom 6h, Online 4h

## Objectives:

At the end of the course delegates will understand:

- The Ford GPDS Supplier Engagement Process,
- The eAPQP application,
- The usage of Health Charts,
- The sub-tier Supplier APQP/PPAP readiness tracking document.

## Contents:

- Definition, principles and benefits of the "Supplier Engagement Process",
- "Priority Supplier" definition and assessment criteria,
- "On-Site Evaluation" definition, topics and plan,
- Reporting forms,
- Usage of Ford's eAPQP reporting tool "Schedule A",
- Handling of part related Health Charts,
- Deliverable rating criteria,
- Sub-tier Supplier APQP/PPAP readiness tracking document and usage,
- Sub-tier Supplier key areas of focus and relating APQP/PPAP Readiness Deliverables.

## Method:

Presentation, examples, and discussions

## Prerequisites:

"APQP/PPAP Requirements" training contents are assumed as known. The appropriate seminar is usually offered a day before so that it is beneficially to book both training days together.

## Necessary materials:

None

**Notes:** Open courses (internal and external delegates) will be held at Ford locations. Furthermore, courses can be ordered in German or English language on-site.

2021 / 2022

## GPDS Training

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 Classroom Training

 modulare 2h Online Live Seminars (coherent) 4h in total

# CPA Capacity Planning Analysis

## Target Audience:

- Employees at all levels and from all areas – especially from Product Development, Manufacturing, Purchasing, Sales, Material Planning & Logistics and Quality – who are responsible for capacity planning, quality of products, services, and production part release activities.
- Experienced employees & newcomers who want to understand Ford's requirements regarding capacity planning analysis.

**Duration:** Classroom 4h, Online 4h

## Objectives:

At the end of the course delegates will:

- Understand Ford requirements of capacity analysis
- Be able to calculate possible capacities and assess degree of capacity utilization of manufacturing facility
- Be able to register as certified capacity planner in Ford's systems

## Contents:

- basics of capacity planning analysis,
- timing for capacity demonstration,
- capacity analysis related terms and abbreviations,
- capacity requirement sources,
- OEE calculation,
- Capacity Analysis Report completion,
- required actions in GCP (**G**lobal **C**apacity **P**lanning) and MCPV (**M**anufacturing **C**apacity **P**lanning **V**olumes),
- interpretation of capacity analysis output,
- transferring capacity analysis figures into Ford's adopted PSW form,
- Certification and registration process for **Certified Capacity Planners**.

## Methods:

Presentation, examples, and discussions

## Prerequisites:

It is strongly recommended to participate in "APQP/PPAP Requirements" and "GPDS Supplier Engagement Process" trainings before, since CPA is part of these requirements. Only all modules together will explain the complete relationships of all production part release requirements and how to document them.

**Necessary materials:**None

## Notes:

Open courses (internal and external delegates) will be held at Ford locations. Furthermore, courses can be ordered in German or English language on-site.

2021 / 2022

## CPA Training

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 Classroom Training

 modulare 2h Online Live Seminars (coherent) 4h in total



# APQP / PPAP Evidence Workbook

Evidence to fulfill PSW requirements (Ford)

APQP = **A**dvanced **P**roduct **Q**uality **P**lanning

PPAP = **P**roduction **P**art **A**pproval **P**rocess

## Target Audience:

- Employees at all levels and from all areas (internal and suppliers) – especially from Product Development, Manufacturing, Purchasing and Quality – who are responsible for quality of products, services and production part release activities
- Experienced employees & newcomers who want to understand Ford's requirements regarding APQP/PPAP Evidence Workbook (incl. SCCAF)

**Duration:** Classroom 3h, Online 2,5h

## Objectives:

At the end of the course delegates will:

- Understand structure of standardizes evidence forms of APQP/PPAP Evidence Workbook
- Know how to complete the APQP/PPAP Evidence Workbook

## Contents:

- Background and benefits of APQP/PPAP Evidence Workbook (incl. SCCAF)
- Contents and key Deliverables of APQP/PPAP Evidence Workbook (incl. SCCAF)
- Completing APQP/PPAP Evidence Workbook (incl. SCCAF)
- Meaning of APQP/PPAP Evidence Workbook (incl. SCCAF) key Deliverables
- Necessary expertise for completing APQP/PPAP Evidence Workbook (incl. SCCAF)

## Methods:

Presentation, examples, and discussions

## Prerequisites:

It is strongly recommended to participate in "GPDS Supplier Engagement Process" training before, since APQP/PPAP Evidence Workbook (incl. SCCAF) is part of these requirements. Only all modules together will explain the complete relationships of all production part release requirements and how to document them.

## Necessary materials:

None

## Notes:

Open courses (internal and external delegates) will be held at Ford locations. Furthermore, courses can be ordered in German or English language on-site.

2021 / 2022

## EWB Training

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 Classroom Training

 2,5 h Online Live Seminar

# SCCAF & Control Plan

SCCAF = **S**pecial **C**haracteristics **C**ommunication and **A**greement **F**orm

## Target Audience:

- Employees of all levels and areas, particularly product development, manufacturing, and quality, with responsibility for product quality, process planning, service or part release activities.
- Experienced employees & newcomers who are involved in the planning, handling and / or approval of Special Characteristics.

**Duration:** Classroom 4h, Online 4h

## Objectives:

- At the end of the course delegates will have an overview about:
- The structure and handling of the SCCAF and the Control Plan.
  - The rules, procedures and timing for creating these documents.

## Contents:

- Definition and benefits of a regular SCCAF process
- Timeline of the SCCAF process and responsibilities
- SCCAF inputs and outputs
- SCCAF change management
- Transition from SCCAF to the Process Control Plan
- Areas and contents of SCCAF and Process Control Plan
- Structure and correct creation of these documents

## Methods:

Presentation, examples, exercise, interactions and discussions

## Prerequisites:

Basic knowledge of FMEA and the APQP process according to Ford guidelines are desirable and advantageous.

## Necessary materials:

none

## Notes:

Open courses (internal and external delegates) will be held at Ford locations. Furthermore, courses can be ordered in German or English language on-site.

2021 / 2022

## SCCAF Training

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 Classroom Training

 modular 2h Online Live Seminars (coherent) 4h in total



# FMEA acc. FORD FMEA HANDBOOK

Prevent, detect and prioritize Failures

## Target Audience:

- Employees of all levels and from all areas – especially from Product Development, Manufacturing, Purchasing, Sales and Quality – who take place in the development, production and handling processes.
- Experienced employees & newcomers who want to understand Ford's FMEA approach.

**Duration:** Classroom 2,5 days Online separated in Design- and Process-FMEA each 5h

## Objectives:

At the end of the course delegates will understand and can apply:

- Ford's FMEA approach
- Customer (Ford) specific requirements
- Identifying and handling of special characteristics
- To address criticality of design and/or process issues

## Contents:

- Design FMEA
- Process FMEA
- Special Characteristics YS/YC, CC/SC/HI/OS
- FAP 03-111
- Handling of special characteristics
- Function approach
- Cause Analysis
- Effect and its Severity
- Risk assessment
- Recommended actions
- Interactions with: Design Control Plan, Production Control Plan, SCCAF
- Special Controls, Poka-Yoke

## Methods:

Presentation, exercises, case studies, discussion

## Prerequisites:

None

## Necessary materials:

None

## Notes:

Open courses (internal and external delegates) will be held at Ford locations. Furthermore, courses can be ordered in German or English language on-site.

2021 / 2022

## FMEA Training

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■ Classroom Training

■ Design FMEA modular 2,5 h Online Live Seminars (coherent) 5h in total

■ Process FMEA modular 2,5 h Online Live Seminars (coherent) 5h in total

# VDA AIAG Design FMEA Harmonisation 1st edition :

Prevent, detect and prioritize Failures

2021 / 2022

## Target Audience:

- Employees of all levels and from all areas – especially from Product Development.
- Experienced employees who want to understand VDA AIAG Design FMEA approach.

**Duration:** Online 4h

## Objectives:

At the end of the course delegates will understand:

- The new VDA AIAG Design FMEA approach

## Contents:

- The Harmonization VDA AIAG
- The 7 Step approach
- The System Structure
- The Function Failure Net
- The new Design FMEA 3 Layer Form
- Boundary Diagram
- Interface Analyses
- Parameter Diagram and Robustness Checklist
- The new Action Priority (former RPN)
- The new Rating Tables
- Survival Tipps for easier Transition

## Methods:

Presentation, exercises, discussion

## Prerequisites:

VDA or AIAG FMEA experience

## Necessary materials:

None

## Notes:

Open courses (internal and external delegates) will be held at Ford locations. The courses can be ordered in German or English language on-site.

## VDA AIAG Design Training

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 modular 2h Online Live Seminars (coherent) 4h in total

# VDA AIAG Process FMEA Harmonisation 1<sup>st</sup> edition :

Prevent, detect and prioritize Failures

2021 / 2022

## Target Audience:

- Manufacturing, Purchasing, Sales and Quality – who take place in the development, production and handling processes.
- Experienced employees who want to understand VDA AIAG Process FMEA approach.

**Duration:** Online 4h

## Objectives:

At the end of the course delegates will understand:

- The new VDA AIAG Process FMEA approach

## Contents:

- The Harmonization AIAG VDA
- The 7 Step approach
- The Process Structure
- The Function Failure Net
- The new Process FMEA 3 Layer Form
- Process Flow Diagram
- Micro Operation Process Function description
- 4M approach Failure cause mechanism
- The new Action Priority (former RPN)
- The new Rating Tables
- Survival Tipps for easier Transition

## Methods:

Presentation, exercises, discussion

## Prerequisites:

VDA or AIAG FMEA experience

## Necessary materials:

None

## Notes:

Open courses (internal and external delegates) will be held at Ford locations. The courses can be ordered in German or English language on-site.

## VDA AIAG Process Training

July							August							September						
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modular 2h Online Live Seminars (coherent) 4h in total

# Global 8D

Describe the Problem, identify Root Cause and permanent elimination

## Target Audience:

- Employees of all levels and from all areas – especially from Product Development, Manufacturing, Purchasing, Sales and Quality – who take place in the development, production and handling processes.
- Experienced employees & newcomers who want to understand Ford's G8D approach.

**Duration:** Classroom 2,5 days, Online 7,5h.

## Objectives:

At the end of the course delegates will understand and can apply:

- Ford's Global 8D approach
- Global 8D report
- G8D to solve problems

## Contents:

- Problem description
- Team approach
- Emergency Response Action
- Interim Containment Action
- Permanent Containment Action
- Root cause analysis
- Is./ Is not analysis
- Differences and changes investigation
- Test Matrix
- Root cause of the root cause

## Methods:

Presentation, exercises, case studies, discussion

## Prerequisites:

None

## Necessary materials:

None

## Notes:

Open courses (internal and external delegates) will be held at Ford locations. Furthermore, courses can be ordered in German or English language on-site.

2021 / 2022

## Global 8D Training

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 Classroom Training

 modular Online Live Seminars (coherent) 3x 2,5h --> 7,5h in total

# Statistical Process Control (SPC)

Statistical method for the evidence of Stability and Capability

## Target Audience:

Employees at all levels and from all areas (internal and suppliers) – especially from Product Development, Manufacturing, Purchasing and Quality – who are responsible for quality of products and services.

**Duration:** Classroom 16h, Online 10h

## Objectives:

At the end of the course delegates will be able:

- To dominate important product characteristics in scope of mass production
- To understand customer requirements for process capability
- To derive actions from process capability results

## Content:

Purpose of Statistical Process Control is to monitor process dispersion and location in order to control processes. This allows user to take appropriate actions on their processes with reference to continuous improvement. For this the following contains will be considered:

- Background, history and philosophy of SPC,
- Context to other quality tools as source of SPC characteristics,
- Meaning and how to deal on special characteristics,
- Determination and prerequisites for SPC criteria,
- Basics of statistics,
- Shapes of distributions and interpretation,
- Basics of Measurement System Analyses,
- SPC application for variable and attribute data,
- Selection and application of process control charts for variable and attribute data,
- Differentiation of common cause and special cause variation,
- Stability criteria,
- Out-of-control indications,
- Indices to determine process capability ( $C_p$ ,  $C_{pk}$ ) and process performance ( $p_p$ ,  $p_{pk}$ ),
- Interpretation of indices and derived actions

## Methods:

Presentation, examples, exercises and discussions

**Prerequisites:** None

**Necessary materials:** Calculator

## Notes:

Open courses (internal and external delegates) will be held at Ford locations. Furthermore, courses can be ordered in German or English language on-site.

2021 / 2022

## SPC Training

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21	22	23	24	25	26	27
28						


March						
Mo	Tu	We	Th	Fr	Sa	Su
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

April						
Mo	Tu	We	Th	Fr	Sa	Su
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

May						
Mo	Tu	We	Th	Fr	Sa	Su
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

June						
Mo	Tu	We	Th	Fr	Sa	Su
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

 Classroom Training

 modular 2h Online Live Seminars (coherent) 10h in total

# DoE: Design of Experiments

Efficient experiments and identification of significant factors and interactions.

**Duration:** Classroom 1,5 Days, Online 5h

**Target Audience:**

- Research- Design- and Process-Engineers

**Target:**

The necessary skills will be provided to:

- Plan an experiment
- Run a structured experiment
- Analyse observed data
- Generate a mathematical prediction model

**Content:**

- One Factor Experiment (linear Regression)
- Full Factor Plan
- Daniel Plot
- Fraction Factor Plan
- Response Surface Experiment

**Method:**

Presentation, examples, experiments, calculations and discussions

**Prerequisite:**

None

**Material:**

Pocket Calculator ideally laptop for DoE excel calculations sheets

**Remarks:**

DoE training is the prerequisite for the 3 day engineering statistic class.

On request

# Engineering Statistics

Statistical tools for development and process

**Target Audience:**

- Research-, Design- and Manufacturing - Engineers.
- Black Belts (DCOV)

**Duration:** Classroom 2,5 Days, Online 7,5h

**Aim:**

Learn important statistical tools for

- Product Development
- Process and Manufacturing

**Content:**

- DoE
- Process Run Chart
- Taguchi Robust Design
- Weibull Analyses
- Gage R&R
- Response Surface Experiment
- Excel Solver Multiparameter Optimization
- Process Capability Analyses

**Method:**

Presentation, exercises, calculations and discussions

**Prerequisite:**

Completion of DoE training class or DoE knowledge and excel basics is mandatory to attend Engineering Statistic Training Class.

**Materials:**

Laptop for DoE excel calculation sheets.

**Remarks:**

DoE stands for Design of Experiments a structured efficient Test approach using orthogonal Test Matrices.

DoE is the prerequisite to attend the 3 Day Engineering Statistics training class.

DCOV (Define Characterise Optimise Verify) is the Design for Six Sigma Approach and will be simulated with a Fuel Filler Flap Example during the Engineering Statistics Training.

On request



# Measurement System Analysis

Basics, Variable and Attributive MSA Procedures acc. AIAG 4<sup>th</sup> and FORD

**Duration:** Classroom 6h, Online 3h

**Target Audience:**

- Employees who are responsible for the MSA confirmation.

**Aim:**

Learn the MSA Requirements:

- MSA AIAG 4<sup>th</sup>
- Ford

**Content:**

- Bias, Stability, Linearity
- Study 1 Gage Capability
- Study 2 Anova Gage R&R
- Study 3 Gage R for automated Measurements
- Attributive Short Method
- Attributive Signal Detection
- Attributive Cohens-Kappa-Analyses
- Attributive Gage Performance Curve
- MSA with MiniTab Software

**Method:**

Presentation and Exercise

**Prerequisite:**

Basic Statistical Knowledge and SPC Awareness, ideally completion of SPC Training.

**Material:**

Pocket Calculator or Laptop

**Remarks:**

The Participants will get several Excel MSA Examples after the Training.

On request

# Ford Failure Mode Avoidance

Robustness Documentation

**Target Audience:**

Product Development- and Quality- Engineers

**Duration:** Classroom 4h, Online 2h

**Objectives:**

The participants will be prepared to conduct, with a special Excel Template, the Ford requested Robustness Documentation to comply with the Failure Mode Avoidance Process

**Content:**

Boundary Diagram  
Function and Robust Design  
P-Diagram,  
Robustness Checklist  
Robustness Demonstration Matrix  
Test Methods  
Robustness Excel Template

**Method:**

Presentation and Exercise

**Prerequisite:**

Ford FMEA Knowledge according Ford FMEA Handbook 4.2

**Materials:** none

**Remarks:**

The Trainer is a former Product Development Engineer he is familiar with the Ford FAP's and stays in close contact with Ford of Europe PD Quality and with the worldwide Ford Failure Mode Avoidance Experts.

On request

## Basic Office Outlook, Word and Excel

Online Seminar

2h Outlook Basics:

- Folder
- Signature
- Auto Reply Message
- Rules
- Calendar
- Task
- Contacts



2h Word and Excel Basics:

- Templates
- Formatting
- Auto Correct
- Insert Table
- Insert Picture
- Header and Footer



- Create Table
- Formatting
- Simple Calculations
- Create Diagrams
- Header and Footer
- Print Layout



On request

## Price List 2021/22\*

\* cost for each single Participant, Ford Employee's please contact us for Discount Details

<b>Class Room and Online Training</b>	<b>plus 19% VAT</b>
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Topic	Classroom	Online
Capacity Planning Analyses	4h / 340,00 €	2x2h / 340,00 €
APQP/PPAP Evidence Workbook	4h / 340,00 €	1x2,5h / 340,00 €
Special Characteristic Communication Agreement Form	4h / 340,00 €	2x2h / 340,00 €
APQP/PPAP Requirements	8h / 490,00 €	3x2h / 490,00 €
GPDS Supplier Engagement Process	6h / 490,00 €	2x2h / 490,00 €
QI Manufacturing Site Assesment	8h / 490,00 €	3x2h / 490,00 €
Measurement System Analyses	7h / 490,00 €	2x1,5h / 490,00 €
VDA AIAG Design FMEA	7h / 490,00 €	2x2h / 490,00 €
VDA AIAG Process FMEA	7h / 490,00 €	2x2h / 490,00 €
Statistical Process Control	2 Tage / 840,00 €	5x2h / 840,00 €
Design of Experiments	1,5 Tage / 840,00 €	2x2,5h / 840,00 €
Ford FMEA (Design & Process)	2,5 Tage / 1.250,00 €	---
Design FMEA Online Training	---	2x2,5h / 490,00 €
Process FMEA Online Training	---	2x2,5h / 490,00 €
Global 8D	2,5 Tage / 1.250,00 €	3x2,5h / 1.250,00 €

The equivalent content is conveyed in the live online training courses as in the classroom training.