

Training Catalog 2023/24



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"each more than 20 years of experience in teaching"

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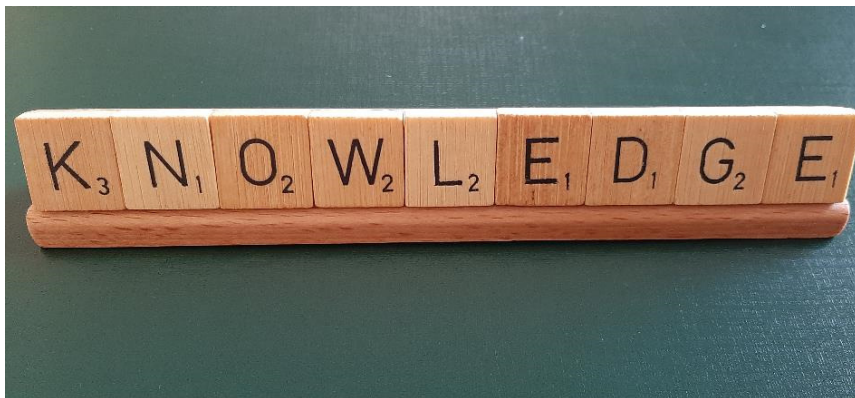
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Q1 Manufacturing Site Assessment

Q1 = Quality recognition status by Ford

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: presence training 8h / online Training 3x 2h

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
- Q1scoring 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) are offered as presence or live online events.

Q1 MSA Training

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 Classroom Training

 modulare 2h Online Live Seminars (coherent) 7h 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 & new comers wishing to gain an overview of automotive quality requirements.

Duration: presence training 8h / online Training 3x 2h

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 project management on vehicle level,
- Structure and contents of project management on system- and component level,
- 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) are offered as presence or live online events.

APQP PPAP 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: presence training 6h / online Training 2x 2h

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.

Necessary materials:

None

Notes:

Open courses (internal and external delegates) are offered as presence or live online events

GPDS Training

2023 / 2024

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■ Classroom Training

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

ePSW Part Submission Warrant

electronic Part Submission Warrant

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 & new comers who want to understand the Ford requirements regarding ePSW.

Duration:

Presence training 3h / Online-Training 2,5h

Objectives:

At the end of the course delegates will:

- Understand the structure and contents of ePSW database
- Know how part release activity is realized in ePSW database

Contents:

- Meaning and benefits of ePSW
- Access to ePSW
- Part release routine in ePSW
- The 3 ePSW screens and related sections
- PPAP checklists
- Types of sub-tier suppliers and types of PPAP packages
- Overview of PPAP phases and related PPAP-elements
- PPAP evidences of completion
- PPAP approval routine depending on submission level

Methods:

Presentation, examples, project work, and discussions

Prerequisites:

The contents of „APQP/PPAP Requirements“ training are assumed as known.

Necessary materials:

None

Notes:

Open courses (internal and external delegates) are offered as presence or instructor-led online events.

ePSW Training

2023 / 2024

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 Classroom Training

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

CPA Capacity Planning Analysis (for sub-tier suppliers)

Capacity Analysis based on EXCEL – for Capacity Analysis based on DATABASE see “eCAR” training

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 & new comers who want to understand Ford's requirements regarding capacity planning analysis.

Duration: presence training 4h / online Training 2x 2h

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) are offered as presence or live online events.

CPA Training

2023 / 2024

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 Classroom Training

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

eCAR eelectronic Capacity Analysis Report (for Tier 1 suppliers)

Capacity Analysis based on DATABASE – for Capacity Analysis based on EXCEL see “CPA” training

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 & new comers who want to understand Ford's requirements regarding capacity planning analysis.

Duration: presence training 4h / online Training 2x 2h

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,
- structure of eCAR database
- 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” training before, as eCAR is part of these requirements and builds on them. 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) are offered as presence or live online events.

eCAR Training

2023 / 2024

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 Classroom Training

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

APQP / PPAP Evidence Workbook

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 & new comers who want to understand Ford's requirements regarding APQP/PPAP Evidence Workbook

Duration: presence training 3h / online Training 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
- Contents and key Deliverables of APQP/PPAP Evidence Workbook
- Completing APQP/PPAP Evidence Workbook
- Meaning of APQP/PPAP Evidence Workbook key Deliverables
- Necessary expertise for completing APQP/PPAP Evidence Workbook

Methods:

Presentation, examples, and discussions

Prerequisites:

All contents of the "APQP/PPAP Requirements" training are assumed to be known. Prior participation in this training is therefore mandatory.

NOTE: Also for the online trainings, both trainings can be booked in series, as the "APQP/PPAP Requirements" training ends at noon and the "APQP/PPAP Evidence Workbook" Training starts in the afternoon.

Necessary materials:

None

Notes:

Open courses (internal and external delegates) are offered as presence or instructor-led online events.

EWB Training

2023 / 2024

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 Classroom Training

 2,5h Online Live Seminar

SCCAF & Control Plan

SCCAF = Special Characteristics Communication and Agreement Form

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: presence training 4h / online Training 2x 2h

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) are offered as presence or live online events.

SCCAF Training

2023 / 2024

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 Classroom Training

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

Design 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 1 day ONLINE Design FMEA 5h

Objectives:

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

- Ford's FMEA approach
- FMEA specific requirements IATF 16949 Ford CSR
- Identifying and handling of special characteristics to prepare the SCCAF

Contents:

- Preparation of Design FMEA
- Interaction Table and P-Diagram
- Pot Failure Effects and the Severity
- Special Characteristics YS YC
- Function Analyses
- Cause Analyses
- Recommended Actions
- Foundation Family FMEA

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.

Design FMEA Training

2023 / 2024

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 Classroom Training

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

Process 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 1 day ONLINE Process FMEA 5h

Objectives:

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

- Ford's FMEA approach
- FMEA specific requirements IATF 16949 Ford CSR
- Identifying and handling of special characteristics to prepare the SCCAF

Contents:

- Process FMEA preparation
- Special characteristics CC/SC/Hi/OS
- Handling of special characteristics
- Interaction of Control Plan and SCCAF
- Special Controls, Poke Yoke
- Foundation, Family FMEA und Reverse FMEA

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.

Process FMEA Training

2023 / 2024

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 Classroom Training

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

VDA AIAG Design FMEA Harmonisation 1st edition :

Prevent, detect and prioritize Failures

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
- FMEA specific IATF 16949 Ford CSR

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
- Monitor System response FMEA supplement
- Foundation-,Family-FMEA
- FMEA Software use

Methods:

Presentation, exercises, discussion

Prerequisites:

VDA or AIAG FMEA experience

Necessary materials:

none

Notes:

none

VDA AIAG Design FMEA Training

2023 / 2024

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

VDA AIAG Process FMEA Harmonisation 1st edition :

Prevent, detect and prioritize Failures

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
- FMEA specific IATF 16949 Ford CSR

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
- Foundation-, Family-FMEA and Reverse FMEA
- FMEA Software use

Methods:

Presentation, exercises, discussion

Prerequisites:

VDA or AIAG FMEA experience

Necessary materials:

none

Notes:

none

VDA AIAG Process FMEA Training

2023 / 2024

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 modulare 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 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
- 3 Legs 5 Why

Contents:

- Global 8D Check Questions
- Problem description
- 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
- 3 Legs 5 why

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.

G8D Training

2023 / 2024

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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: presence training 2x 8h / online Training 1x 3h and 4x2h

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) are offered as presence or live online events.

SPC Training

2023 / 2024

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 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 4th and FORD

Duration: Classroom 6h, Online 4h

Target Audience:

- Employees who are responsible for the MSA confirmation.

Aim:

Learn the MSA Requirements:

- MSA AIAG 4th
- 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

Price List 2023/24 (plus 19% VAT)

Schulung (online or classroom)	Price
APQP/PPAP Evidence Workbook	820 €
APQP/PPAP Requirements	1.570 €
Capacity Planning Analysis für Unterlieferanten	820 €
Design FMEA	950 €
Design of Experiments	990 €
e Capacity Analysis Report für Tier 1 Supplier	820 €
Engineering Statistics	1.500 €
e PSW Part Submission Warrant	820 €
Global 8D	1.500 €
GPDS Supplier Engagement Process	820 €
Measurement System Analysis	750 €
Process FMEA	950 €
Q1 Manufacturing Site Assessment	1.570 €
SCCAF & Control Plan	820 €
Statistical Process Control	2.870 €
VDA AIAG Design FMEA	750 €
VDA AIAG Process FMEA	750 €

Cost for each single participant, training material included.
 The equivalent content is conveyed in the live online training courses as in the classroom training.
 Please make sure to install the WEB EX Application.