



# Automotive Training Courses

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2023





# About Us

At LMRG we are passionate about supporting and empowering businesses to excel in today's ever-changing market. We help to overcome challenges, uncover opportunities, and achieve remarkable growth, thanks to our expert guidance and innovative solutions.

## Who are we:

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LMRG is a team of dedicated advisors with diverse experience across a variety of industries for over 30 years. Our team brings with them a wealth of both practical experience and industry-backed knowledge, acquired through decades of working with businesses of all sizes and sectors.

## Our approach;

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We believe a collaborative and personalised approach to change is optimal for understanding the individual requirements of an organisation. We take the time to understand the client's unique goals, challenges, and aspirations by immersing ourselves in their operations, culture, and market dynamics. We believe this allows us a greater appreciation for an organisation's functions and provides us with invaluable insights to shape our recommendations.

## What we do;

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We offer various consultancy services designed to target different organisational requirements specific to you. Our services comprise of strategic planning, organisational optimisation & development, market research & analysis and more. We appreciate that a one size fits all approach is not optimal in organisations, therefore, we tailor our solutions accordingly.

Alongside our consultancy support, we also offer training suited to the aerospace and automotive industry and are AIAG-certified distributors for their core tools manuals, accessible through our website.

## Why choose us?;

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- Expertise – our services are supported by over 30 years of industry experience spanning many sectors, as well as being recognised on a global scale.
- Partnership – we believe in a collaborative approach to building meaningful long-term relationships with our clients by maintaining frequent and honest communication, collaboration, and knowledge transfer.
- Results orientation – our goal is to deliver measurable results that can be maintained in the current market and beyond. We pride ourselves on our ability to achieve long-term change.
- Tailored solutions – we acknowledge the diversity and uniqueness of every organisation and strive to develop solutions that will be most effectively implemented with minimal disruption.

# IATF 16949:2016 Executive Understanding

## Background

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This highly interactive 1-day course provides an understanding of the key management requirements in ISO 9001:2015 and IATF 16949:2016. The objective of this course is to assist Top Management to effectively oversee the implementation, maintenance, and improvement of the Quality Management System (QMS)

## Learning Objectives

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- Demonstrate an understanding of the Quality Management System principles used in the development of the organization's QMS
- Apply the process approach as a management tool
- Demonstrate an understanding of how to integrate risk-based thinking into the QMS
- Demonstrate an understanding of ISO 9001:2015 and IATF 16949:2016 requirements related to management roles, responsibilities, and authorities
- Utilize a Gap Analysis Tool to oversee the implementation, maintenance, and improvement of the QMS

## Who Should Attend

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Designed for Executives, Top Management, and the Management Review Team.

## Additional Information

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Duration: 0.5 Day



# IATF 16949:2016 Internal Auditor

## Background

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- Prerequisites
- Self-Study (Mandatory): A series of questions (self-study document) to be answered by the student and turned in prior to, or at the beginning of, the course. The self-study is designed to acquaint you with ISO 9001:2015 and IATF 16949:2016 standards, and the guidelines for auditing management systems.

## Learning Objectives

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- Identify linkages to quality management principles
- Demonstrate an understanding of and apply the automotive process approach to auditing, including risk-based thinking
- Demonstrate an understanding of ISO 9001:2015 and IATF 16949:2016
- Identify the requirements applicable to an IATF 16949:2016 internal auditor
- Identify linkages between IATF 16949:2016 requirements and Customer Specific Requirements (CSRs), including how to audit the applicable CSRs
- Identify linkages between IATF 16949:2016 requirements and the Core Tools
- Apply auditing skills according to ISO 19011 for Internal Auditors

## Agenda

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### Day 1

- Introduction and Course Overview, Quality Management Principles, Process Approach and Risked-Based Thinking, ISO 9001:2015 and IATF 16949:2016 – Requirements and Commentary

### Day 2

- ISO 9001:2015 and IATF 16949:2016 – Requirements and Commentary, Auditing the Core Tools and Customer Specific Requirements – Introductory Analysis, Communication, Conflict Management, Auditing Skills

### Day 3

- Auditing Skills (continued), Auditing Application, Written Examination

## Additional Information

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Duration: 3 Days



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# IATF 16949:2016 Lead Auditor

## Background

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- Prerequisites
- Participants must have a working knowledge of the Core Tools and auditing experience. Although there is no mandatory verification by Training Administrator, lack of the required working knowledge and experience in this competence that may negatively affect training participation and final scoring

## Learning Objectives

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- Identify linkages to quality management principles
- Demonstrate an understanding of and apply the automotive process to auditing, including risk-based thinking
- Demonstrate an understanding of ISO 9001:2015 and IATF 16949: 2016
- Identify the requirements to an IATF 16949:2016 first and second auditor
- Identify linkages between IATF 16949:2016 requirements and CSRs including how to audit
  - applicable CSRs
- Identify linkages between IATF 16949:2016 requirements and the core tools
- Demonstrate knowledge of Rules 5th edition applicable to the first-and second-part audit process
- Apply auditing skills according to ISO 19011 for lead auditors
- Apply the concept of risk-based thinking in the audit process

## Agenda

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**Day 1** - Course Overview, Quality management principles, Process Approach and Risk-Based Thinking

**Day 2** - ISO 9001:2015 and IATF 16949:2016 Requirements and commentary

**Day 3** - ISO 9001:2015 and IATF 16949:2016 Requirements and commentary (continued), Auditing the Core Tools, Auditing CSRs, Communication, Conflict management, Auditing skills

**Day 4** - Auditing Application

**Day 5** - Auditing Application (Continued), Final Examination

## Additional Information

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Duration: 5 Days



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# APQP & PPAP Overview

## Background

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Advanced Product Quality Planning (APQP) and Production Part Approval Process (PPAP). The APQP aspects of this standard define a methodology for ensuring that the product development processes deployed throughout the aviation, space, and defense industries are fully integrated phased processes that extend from concept and design through manufacturing process planning and execution, and on into product use, service, and customer feedback. The PPAP is an output of APQP confirming that the production process has demonstrated the potential to produce products that consistently fulfil all requirements at the customer demand rate.

## Learning Objectives

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- Provide an overview of the Aerospace Advanced Product Quality Planning and Production Part Approval Process in line with AS9145
- Demonstrate and understanding of the 5 phases of APQP, including the specific inputs and outputs related top each phase and provide an understanding of PPAP requirements
- Identify the key linkages between AS9100 and AS9145, AS9102 and AS9103

## Agenda

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- Overview of Aerospace Sector Performance
- Basics of APQP and PPAP
- The 5 phases of APQP (Plan and Define, Product Design and Development, Process Define and
- Development, Product and Process Validation, On-Going Production, Use and Post Delivery Services
- Production Part Approval Process
- Key Linkages between AS9100 and AS9145, AS9102 and AS910

## Additional Information

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Duration: 0.5 Day



# Measurement System Analysis

## Background

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- This one-day course provides an overview of Measurement Systems Analysis (MSA), and the approaches used to analyse both attribute and variable measurements systems defined in the Measurement Systems Analysis reference manual

## Learning Objectives

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- Understand what MSA is, and where it fits within the organizational structure, the core tools and management system.
- Identify the process of measurement including places where error can be introduced leading to incorrect measurement decisions.
- Develop action plans to minimize error in measurement through proven tools like the fishbone diagram.
- Identify the different types of data used to perform MSA and determine the amount of data necessary to implement an MSA study.
- Learn how to develop an appropriate sampling plan for your MSA studies.
- Define the elements of an MSA plan
- Gain an insight for the types of measurement studies required under IATF for various gages.
- Identify and select the tools necessary for conducting various MSA studies.
- Gain knowledge of guidelines for the various tests used to determine the acceptability level for error and how to take effective action to reduce unacceptable error.
- Learn how to properly communicate unacceptable error for further action if no improvement is possible.
- Incorporate the use of MSA through applied exercises.

## Who Should Attend

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- Quality managers, manufacturing managers and supervisors, quality team leaders, quality assurance and laboratory analysts / engineers, anyone involved in the implementation of IATF 16949:2016, individuals and cross functional teams interested in risk reduction and anyone who wants a better understanding of MSA.

## Additional Information

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Duration: 1 Day



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# Failure Mode and Effect Analysis

## Background

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- 2 Days
- This training requires the individual to have a working knowledge and experience with AIAG FMEA 4th Edition execution

## Learning Objectives

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- Describe major changes, improvements, and benefits on the foundations of Process FMEA execution when comparing AIAG FMEA 4th Edition to the new AIAG & VDA FMEA manuals
- Analyze major changes and improvements adopted in the new AIAG & VDA FMEA handbook by completing a detailed comparison between AIAG & VDA FMEA Handbook to the AIAG 4th Edition manual
- Exemplify major changes, improvements, and benefits of Process FMEAs execution when comparing a PFMEA prepared using AIAG FMEA 4th Edition Manual to a PFMEA prepared using the new AIAG & VDA FMEA Handbook
- Identify the major changes and improvements when evaluating the content of a Process FMEA prepared using AIAG FMEA 4th Edition Manual compared to a PFMEA prepared using the new AIAG & VDA FMEA Handbook
- Evaluate the consistency of PFMEA application cases
- Measuring PFMEA effectiveness, efficiency, and linkage to the Cost of Poor Quality (COPQ)
- Develop a Transition Implementation Plan from AIAG FMEA 4th Edition to AIAG & VDA FMEA Handbook

## Who Should Attend

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- Recommended for Core Process FMEA Team to include process/manufacturing engineers, ergonomic engineers, process validation engineers, quality/reliability engineers, project managers, FMEA moderators/facilitators, auditors, and other roles with a background and experience with  
AIAG Process FMEA.

## Course Outline

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- **Day 1** – Overview changes of the new AIAG & VDA FMEA handbook, Applying 7-Steps approach and understanding PFMEA steps 1 to 4.
- **Day 2** – Continue PFMEA steps 5 to 7, process flow, FMEA, control plan and work instruction linkages. Comparing a PFMEA prepared using AIAG FMEA 4<sup>th</sup> edition and AIAG & VDA FMEA handbook, PFMEA effectiveness, efficiency and linkage to the COPQ and finish with the transition implementation plan from FMEA 4<sup>th</sup> edition to AIAG & VDA FMEA handbook



# Statistical Process Control

## Background

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- Statistical Process Control is the use of statistical techniques such as control charts to analyze a process or its output so as to take appropriate actions to achieve and maintain a state of statistical control and to improve the process capability.

## Learning Objectives

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- Learn proven questioning techniques for effective SPC implementation through developing an Operational Definition
- Demonstrate an understanding of the linkage between SPC and the larger scope of the core tools manuals (MSA, FMEA, APQP), along with the requirements of IATF 16949.
- Identify the sources of variation present and know how to categorize normal versus non-normal
- Differentiate between prevention and detection and illustrate their impact on the Cost of Poor Quality (CoPQ)
- Learn about the different tools that support SPC implementation
- Identify the correct and applicable tools for both variable and attribute data
- List best practices regarding implementation and taking action on out-of-control conditions to aid in effective implementation
- Calculate and Interpret acceptance criteria for process capability indices like CpK and PpK
- Apply methods for implementing the principles of SPC to manufacturing processes
- Apply software to the calculation of Control Limits and incorporation of measurement studies process to the selected Process Controls
- Demystify SPC by learning to carry out all calculations and interpretations following the steps in the SPC reference manual

## Who Should Attend

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- Recommended for quality managers, quality team leaders, manufacturing managers and technicians, quality assurance and laboratory technicians and engineers, anyone involved in the implementation of IATF 16949:2016, individuals and cross functional teams interested in risk reduction and anyone who wants a better understanding of SPC.

## Additional Information

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Duration: 1 Day



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