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Improvement Methodologies

Improvement Methodologies for all Business Systems and Core Tools

Even if your organization is not compliant to International Systems such as ISO 9001:2008 or ISO/TS 16949:2002, these Improvement Methodologies can be used to improve your competitive edge. Successful organizations realize that these methodologies are the corner stone for continual improvement which, not only a requirement by customer but, are a requirement for them to become and stay successful.

These Improvement Methodologies can be implemented in conjunction with one another, or individually. They can be used to satisfy both external customer requests and your own needs for improvement. The order in which they appear in this catalog are typically the order that an organization should consider their implementation

Control Planning Workshop

This one day course is intended for those who need a detailed understanding of the requirements of control plans as they relate to ISO/TS 16949:2002, and the automotive industry. Participants will review and discuss the implementation techniques, recommended approaches, and the benefits of an effective control planning system. Quality and auditing personnel are also recommended to attend. Organizations may choose to conduct this in conjunction with Error Proofing. Course duration would be adjusted.

Coursework covers:
- Review of the requirements of APQP and Control Plans as they relate to ISO/TS 16949:2002
- A detailed review of the requirements of control plans for prototype, pre launch and production
- Activities for understanding and development of control plans
- Review of recommended practices for implementation and sharing of best practices of Control Plans
- How control plans relate to the APQP, PPAP and Auditing processes

Course Outcomes:
- Supply participants with a understanding of APQP and Control Plans as they relate to ISO/TS 16949:2002
- Be able to explain the format and contents of the APQP reference manual including the 5 phases
- Understand and explain recommended formats for an effective APQP and Control Plan systems
- Have a fundamental understanding of the requirements of the remaining core tools

Course duration:
- 8 hours

Materials Provided:
- Copy of the presentation materials

Note: Published copies of the Advanced Product Quality Planning reference manual are recommended and can be provided for each participant at AIAG member prices. www.aiag.org

Error Proofing Workshop

This workshop is intended for both product and process engineers who are responsible for making decision on those designs. The workshop covers the basic definitions of error proofing, mistake proofing, and Poka-yoke. Through discussion, examples, and activities, participants will learn effective techniques for identifying error proofing opportunities and implementing those techniques. Also how to identify opportunities for improvement when a product nonconformance has been identified

Coursework covers:
- The fundamental definitions of error proofing
- A detailed review of implementation formats and techniques
- Review of several examples of error proofing for both products and processes
- Activities centered around case studies to help participants identify opportunities for error proofing
- Error proofing as it relates to both ISO 9001 and ISO/TS 16949
- Discussion on when, and how, error proofing should be implemented during the DFMEA and PFMEA process

Course Outcomes:
- Be able to explain the fundamental differences between error proofing, mistake proofing, and Poka-Yoke
- Discuss how error proofing should be used during the planning process for both product and process design
- Learn how to identify error proofing opportunities during design, and after nonconformances have been identified
- Discuss how error proofing techniques satisfy many requirements of ISO/TS 16949:2002

Course duration:
- 8 hours

Materials Provided:
- Copy of the presentation materials

Effective Problem Solving

Also referred to as:

Corrective Actions, Corrective and Preventive Actions, Root Cause Analysis, 8D, 7 Step, and 5 Why.

This workshop is based on the AIAG published "CQI-10" Effective Problem Solving" guideline. This guideline, published in 2006, is the result of efforts by the automotive industry to establish a common guideline for corrective and preventive actions, and effective problem solving. The guideline meets all the *fundamental requirements* of ISO 9001:2008, ISO 13485:2003, AS 9100, ISO/TS 16949:2002, and all known OEM requirements such as 8D, 7 Step, 5 Why, etc. Although some of these OEMs may require response to nonconformances in their specific format, this guideline established a baseline process that can be used within your organization.

Coursework covers:
- A detailed review of the CQI-10 manual
- How to conduct a problem solving survey (assessment) in your organization
- Discussion on how to change the culture of problem solving within your organization
- Recommended formats for corrective action response
- Review of tools and techniques for effective root cause identification and analysis
- Group activities based on case studies to reinforce the recommended process

Course Outcomes:
- Explain how CQI-10 is considered the base line for all problem solving activities
- Know how to conduct a survey of your organization to identify the current culture, and recommend improvements
- Understand how best in class companies approach effective problem solving
- Be able to identify the proper tools for effective root cause identification and analysis
- Be able to explain to others how to use the recommended formats

Course duration:
- 8-16 hours depending on need

Materials Provided:
- Copy of the AIAG CQI-10 guideline manual
- Activity packet with case studies

Cost of Quality

This workshop is intended for those participants who need a detailed understanding of the Cost of Quality process. Recommended participants should be those who will identify and assess cost of quality metrics within the organization. Others within the organization who will support the process, such as Quality and Management personnel, are encouraged to attend.

Coursework covers:
- Review of the Quality Cost Model that includes Prevention Costs, Appraisal Costs, Internal Failure Costs and External Failure Costs.
- Where Cost of Quality fits into Quality Management Systems such as ISO 9001 and ISO/TS 16949
- How to identify a listing of the Quality Costs present within your organization across the four cost categories.
- Detailed discussion on how to analyze cost of quality data identified within you organization
- Understand the tools that can be used to support a Cost of Quality program.
- How to implement a effective cost of quality system within your organization

Course Outcomes:
- Be able to explain the cost of quality model to others in your organization
- Understand how an effective cost of quality system meets many requirements of your QMS
- Know how to analyze, and present, cost of quality data to management
- Be able to design, and recommend an effective cost of quality system to work within your organization

Course duration:
- 8 hours

Materials Provided:
- Copy of the presentation materials

Five S

This one day workshop is intended to give participants the fundamental education required to begin their journey to Five S and eventually, Lean Manufacturing. Through lecture and activities participants will learn the basics of Sorting, Simplifying, Systematic Cleaning, Standardizing, and Sustaining. As time, and production, permits participants will form teams and begin to identify potential areas for a Five S project, establish a communications board for that area, start "Sorting" and develop a plan for the remaining 4 S's.

Coursework covers:
- A fundamental review of the basics of Five S
- Discussion and activities on how to identify areas for improvement with Five S
- Review of examples and case study information for each of the Five S's
- Recommended techniques for establishing, and maintaining a effective Five S philosophy within your organization
- Recommended techniques for communicating Five S within your organization
- Initial identification of areas for Five S focus, and initial sorting of that area

Course Outcomes:
- Understand the fundamental of Five S
- Explain to other how Five S is the foundation of Lean Manufacturing
- Be able to identify areas for Five S improvement
- Understand how to begin, and complete, a Five S project
- Be able to explain to other, the benefits or Five S
- Explain how Five S meets many internal and external requirements for Lean, corrective actions, continual improvement, etc.

Course duration:
- 8 hours

Note: Participants may want to schedule a follow up session(s) with the instructor for continued Five S implementation and management support

Lean Manufacturing

This one day workshop is intended to give participants the fundamental awareness to begin their journey down the road of Lean Manufacturing. Through lecture and activities participants will learn the basics of Lean Manufacturing and the tools and techniques used in that journey. Participants will learn the basics of Stability, Continuous Flow, Synchronized Production, value stream mapping and pull systems. *This workshop is intended to be the first step, and sets the foundation, for further more advanced implementation workshops.*

Coursework covers:
- Review of the fundamentals of Lean Manufacturing
- Discussion on many of the lean tools such as Just-In-Time delivery, pull systems, takt time, standardized work, and visual factory
- Discuss techniques for implementation of a lean philosophy and management support of that philosophy
- Review case studies of successful organizations that have implemented the lean philosophy

Course Outcomes:
- Be able to explain to others the fundamentals, and benefits, of lean manufacturing
- Understand how each of the main lean tools are used
- Know the basics on how to identify and select the proper lean tools for further implementation within your organization
- Be able to discuss, and use these tools with further lean workshop events

Course duration:
- 8-16 hours

Materials Provided:
- Copy of the presentation materials

Six Sigma – Green Belt Overview

This one half to one day workshop is intended to give participants a fundamentals understanding of Six Sigma, as it relate to "Green Belt" Status. Management and those who will support the process are also recommended to attend. Through lecture and activities participants will learn how the DMAIC model is used for Six Sigma implementation. A fundamental review of all of the common tools used during the DMAIC process will be learned through activities and review of case study information. *This workshop is intended to be the first step, and sets the foundation, for further more advanced implementation workshops.*

Coursework covers:
- The fundamentals and benefits of a Six Sigma philosophy
- A detailed review and the DMAIC model
- A fundamental review of all tools and techniques recommended by the DMAIC model
- Identification of the right projects for the application of Six Sigma
- Discussion on how companies begin, and continue, the Six Sigma philosophy
- Discussion on recommended next steps in the Six Sigma process

Course Outcomes:
- Understand the fundamental and benefits of Six Sigma
- Be able to explain the DMAIC model, and the techniques contained within it, to others
- Understand how many of the improvement tools currently used within your organization can be used to support the process
- Understand how to select the proper project for Six Sigma
- Explain how Six Sigma meets many internal and external requirements for Lean, corrective actions, continual improvement, etc.

Course duration:
- 4-8 hours

Materials Provided:
- Copy of the presentation materials

Note: Organizations may want to schedule a follow up session(s) with the instructor for continued Six Sigma implementation.

Six Sigma – Implementation Workshop

This three to five day workshop is intended to give participants the skills needed to identify and conduct a complete Six Sigma Project, as it relates to "Green Belt" Status. Participants will learn the DMAIC model and how it will guide them through a project. During the initial three days participants will identify a green belt project, write a project charter, present it to management for approval, and begin the initial data collection and root cause analysis process. Participants will also identify additional project tasks including a timeline for project completion. Days four and five can be conducted in sequence with the initial three days or delayed to allow participants time to complete the entire data collection process and solution identification on their own. The instructor will coach the participants on day four and five with project implementation and presentation to management. Depending on their depth, some projects may be completed in the five day schedule, others may take additional time. This will depend on business/customer constraints, project costs, etc.

Workshop covers:
- A detailed understanding of the Six Sigma process
- A detailed review and the DMAIC model
- Experience using all the tools in the DMAIC model for green belt projects
- Identification of a six sigma project
- Writing of a project charter including presentation to management for approval
- Identification and collection of data on the existing process
- How to use the DMAIC tools to measure, analyze, improve, and control the new and improved process

Course Outcomes:
- A detailed understanding of the six sigma DMAIC model
- Be able to conduct a six sigma green belt project to completion
- Be able to coach others in the DMAIC green belt process
- Understand how to explain to management the requirements, implementation process, and tasks required to complete a green belt project
- Be able to continue to support the six sigma process in their organizations and train other in the DMAIC model

Course duration:
- 24-40 hours

Materials Provided:
- Copy of all courseware materials including handouts

Special Process Assessment
CQI-9 Heat Treating
CQI-11 Plating
CQI-12 Coating

These one day workshops are based in the current versions of the AIAG Special Process assessment guidelines. They are intended to give auditors and assessors within your organization the skills needed to assess your current special process systems as required by many automotive OEM's. Participants will receive a detailed review of one, or all three of the assessment documents, depending on the needs of your organization

Coursework covers:
- A detailed review of the special process documents
- Discussion and activities on completing a system assessment
- Discussion and activities on completing a Job Audit
- Learn how to complete the assessment checklist and submit them to your customers
- How to use the assessment tools for your suppliers of these special processes

Course Outcomes:
- Understand the background of the special process assessment
- Be able to explain to others how to use the checklist contained within the documents
- Be able to conduct a complete system assessment, Job Audit, and submit them to your customer
- Learn how these assessment fit within your current quality system assessments

Course duration:
- 8 hours

Materials Provided:
- Copy of the presentation and activity materials
- Copy of the CQI 9, CQI-11, and/or CQI-12 documents

Note: If you are a customer, or supplier of two to three of these services, the courses can be conducted as one and the course time will be adjusted.
Copies of the CQI-documents will be provided at AIAG member prices from www.aiag.org