



FAILURE MODE AND EFFECTS ANALYSIS (FMEA)

A SYSTEMATIC approach to FOOL-PROOF Product Designs & Manufacturing Processes

Every manufacturer is **SCRAMBLING** to make products that are **FAIL-SAFE**. We need air-crafts that do **NOT** develop mechanical or engine problems. We need to learn either how to build cranes that do **NOT** topple, or learn to prevent perfectly good cranes from toppling in use. We need to learn how to build bullet trains and MRT trains that do not derail nor malfunction. We need to learn how to build hard-disks that do **NOT** crash ... the list goes on ... FMEA is the engineer's **SECRET** to designing and manufacturing products that are as fault-free and as fail-safe as humanly possible ... Find out about this **SECRET WEAPON** ...

This highly practical and applications-oriented workshop on FMEA will arm participants with a **systematic** and **comprehensive** approach to identify and **predict potential problems**, bugs and errors in product designs and manufacturing processes. The results are:

- ✓ **Stable, problem-free and predictable manufacturing processes**
- ✓ **Fully debugged and fool-proofed new products**
- ✓ **No customer complaints and field problems**
- ✓ **The dream of every engineer**

Course Outline

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| Day 1 | <ul style="list-style-type: none">✓ Overview of FMEA✓ Proof of the Need✓ The Origin and History of FMEA✓ Types of FMEA✓ Point and Timing of Application✓ Development of a Process FMEA<ul style="list-style-type: none">» What constitutes a Failure?» Understanding Failure Modes» Types of Effects» Severity Assessment» Relationship amongst Failure Modes, Effects and Causes» Identifying Failure Causes» Occurrence Probability Assessment» Controls and Detection» Risk and Priority Ranking» Corrective Actions» Poka-yoke concepts & applications | Day 2 | <ul style="list-style-type: none">✓ Intro to Design (Product) FMEA✓ Difference btwn Product and Process FMEAs<ul style="list-style-type: none">» Development of a Product FMEA» Real Life Product FMEA exercise✓ Failure Prevention Strategy✓ Maximizing the benefits of FMEA✓ Post-FMEA Actions and Follow-up✓ FMEA - Critical Success Factors |
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- ✓ **Real Life Case Study**

Who Should Attend

Managers, Heads of Departments, Engineers and Engineering Assistants in R&D, Quality & Reliability, Process Engineering, Manufacturing or Production Engineering, Equipment or Maintenance Engineering.

FMEA is NOT possible with individual efforts. It requires intensive and extensive collaboration and teamwork amongst all functions (from R&D to Delivery) involved in the production chain ...

Hence, for maximum training effectiveness, it is strongly recommended that the entire FMEA team attends this course together. Individual Participants will find difficulty in participating actively in the real-life exercises and hence not benefit from them. This is the recommendation of past-participants of this course.

As a minimum, the team should have the following representation : R&D Engineering, Production, Process Engineering, Production Engineering, Quality Engineering, Equipment Engineering. Customer representatives may be invited too.

Training Methodology

Just-in-time !

Teams bring their real-life product designs and production processes into the training room !

What ex-participants say about this program

- ✓ Very useful and practical course
- ✓ Facilitator was very well-versed and has covered the FMEA course fully. Participants have also understood the course well.
- ✓ The facilitator is sincere and “owning” the course in which she delivers and **motivates participants** to be totally involved in idea-exchanging & sharing.
- ✓ Ms Tan is very **active in expression**. Her **instruction is very clear** and really drives us to be keen and interested to follow.
- ✓ Chor Hoong is a **very enthusiastic lecturer**. It really helps in arousing interest of the class
- ✓ **Good presentation and delivery**
- ✓ **Interesting and stimulating**. Concise presentation and good timing
- ✓ Lively and practical
- ✓ **Positively will improve machine marketability**
- ✓ A good course facilitator who can really get everybody involved ...
- ✓ Very lively delivery of lectures and able to get participation from the participants
- ✓ Your **explanation is loud and clear** and **very impressive**
- ✓ Done in a lively manner, with interaction between the lecturer and the participants as well as among the participants
- ✓ **Facilitator was well equipped with in-depth knowledge and resources** to conduct the course in a **professional** manner. **Course well conducted.**