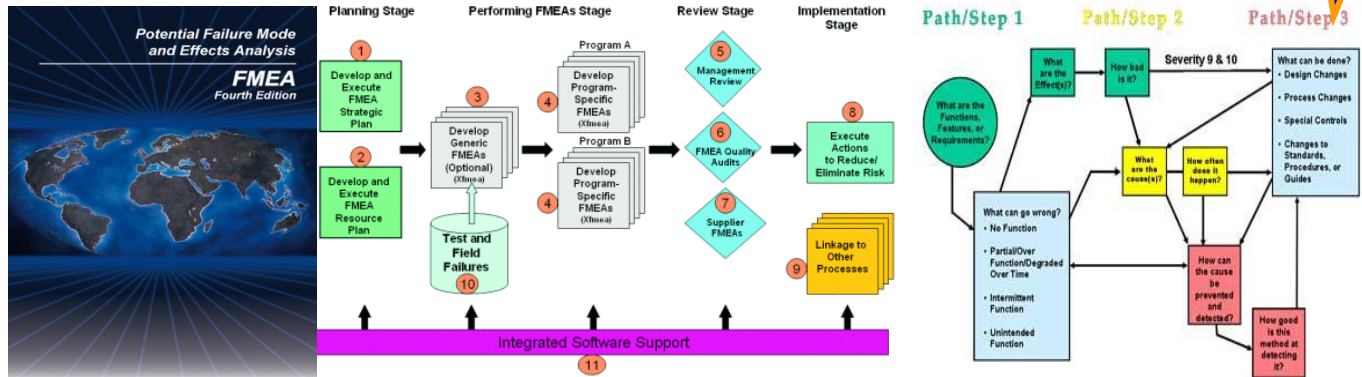




# FAILURE MODE & EFFECTS ANALYSIS (FMEA) (IN-HOUSE / PUBLIC TRAINING PROGRAMME)



## INTRODUCTION

Since its introduction into U.S. industry, Failure Mode and Effect Analysis have generated widespread interest as a means of improving reliability, avoiding costs and shortening lead times. FMEA's appeal lies in its versatility: Its principles and techniques can be applied to virtually any product or process, making it a valuable tool for companies in any industry.

An FMEA can be described as a systematic group of activities intended to recognize and evaluate the potential failure of a product/process and the effects of the failure, identify actions that could eliminate or reduce the chance of the potential failure occurring, and document the entire process. It is complementary to the process of defining what a design or process must do to satisfy the customer.

Because of the general trend industry to continually improve products and processes whenever possible, using the FMEA as disciplined techniques to identify and help minimize potential concern is as important as ever. One of the most important factors for the successful implementation of an FMEA program is timeliness. It is meant to be a "before-the-event" action, not an "after-the-fact" exercise. To achieve greatest value, the FMEA must be done before a product or process failure mode has been incorporated into a product or process. Up-front time spent properly completing an FMEA, when product/process changes can be most easily and inexpensively implemented, will minimize late change crises. An FMEA can reduce or eliminate the chance of implementing a preventive/corrective change that would create even large concerns.

## LEARNING OBJECTIVES

At the end of this training session, participants will be able to:-

- Define Failure Mode and Effect Analysis (4<sup>th</sup>. Edition released on 28 June 2008)
- Explain how FMEA helps improve reliability, cost and lead time
- Identify the 3 stages of "Bathtub Curve" and types of failures they represent
- Explain and illustrate the purpose of Design, Process and Service FMEAs.
- Use and practice appropriate FMEAs at workplace



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- f) Identify several potential benefits of using FMEA
- g) Identify the key imperatives of an effective FMEA implementation
- h) Differences between FMEA 3<sup>rd</sup>. and 4<sup>th</sup>. Edition
- i) Major changes in FMEA 4<sup>th</sup>. Edition
- j) The major impacts of the new changes in current QMS
- k) How to address and implement the changes requirements

## COURSE OUTLINE

### Day 1

#### Fundamentals of FMEA

- ⇒ Definition and Purpose of FMEA
- ⇒ FMEA Approach & Benefits
- ⇒ Definition of Failure Modes
- ⇒ Failure Causes
- ⇒ Failure Effects
- ⇒ Mitigation and Controls
- ⇒ Common Manufacturing Practice on the Production Shop Floor
- ⇒ Common Engineering Practices in the Product Life Cycle
- ⇒ Risk Assessment
- ⇒ Risk Priority Number (RPN)
- ⇒ Reaction Plan

### Day 2

#### FMEA Types and Implementation

- ⇒ Design FMEA
- ⇒ Workshop
- ⇒ Presentation
- ⇒ Process FMEA
  - Workshop
  - Presentation
- ⇒ Control Plan
- ⇒ FMEA and Control Plan Integration
- ⇒ Differences in FMEA 4<sup>th</sup>. Edition
- ⇒ Critical and major changes in 4<sup>th</sup>. Edition
- ⇒ Common Problem Faced in Workplace
- ⇒ Question & Answer Session

## DURATION

2 Days



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### WHO SHOULD ATTEND

Managers and Engineers from Production and Quality Departments. Statistician, Purchasing and Marketing executives will also find this course relevant to their job function.

### CLASS SIZE

Maximum 20~25

### METHODOLOGY

- ⇒ Course Notes
- ⇒ OHP
- ⇒ Exercise
- ⇒ Lecturettes
- ⇒ Case Study

