



# Fault Tree Analysis

## Course Outline



## Course Description

Fault Tree Analysis (FTA) is a technique for identifying and analyzing factors that can contribute to a specified undesired event (called the "top event"). Causal factors are deductively identified, organized in a logical manner and represented pictorially in a tree diagram which depicts causal factors and their logical relationship to the top event.

This one-day course is centered on understanding the basics of fault tree analysis, which will lead to practical application at the end of the session. In addition, additional techniques like the Failure Mode Effects Analysis (FMEA) and Bowtie analysis, to mention a few, will also be featured in the course to appreciate its importance.

## Learning Objectives

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

- Learn the fundamentals of Fault Tree Analysis, its steps and conventions
- Apply the learned concepts in common applicable situations
- Expand the range of tools available for analysis of problem situations

## Program Topics

- **Overview of Fault Tree (FT) analysis.**
  - Origins of FT Analysis
  - Benefits of FT Analysis.
- **Building blocks of FT**
- **Steps to constructing a FT**
  - Fault Trees and Reliability Block Diagrams
  - Drawing Fault Trees: Gates and Events
  - Classic Fault Tree Gates and their Traditional RBD Equivalents
- **Some rules and conventions**
- **Types of Events, Elementary FT Gates and their Analytic Quantification**
  - Types of events (basic, house, undeveloped, conditional).
  - OR gate
  - AND gate
  - Inhibit gate
  - Voting gate
- **Relationship with other techniques**
  - Failure Mode Effects Analysis (FMEA)
  - Bowtie Technique
  - Risk Assessment



## Target participants

- Technical Experts and Specialists

## Material requirements

- a. Courseware material (participant's manual)
- b. Blank bond papers (A4)
- c. Flip charts
- d. Colored whiteboard markers
- e. Colored permanent markers

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