



# Quality-One International

## Fault Tree Analysis (FTA) Course Outline

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- Introduction to Fault Tree Analysis (FTA)
- Risk Concepts
  - Principles of Risk
  - Three Components of Risk
- Deductive vs. Inductive Risk assessment
  - Relationship of FTA to FMEA
- Basic Probability and Reliability expectations
  - Mutually exclusive and related events
- Purpose of FTA
  - Risk Mitigation
- Symbols used for FTA
- Application of FTA Top Down Approach
  - The 5-step Process for Performing a Fault Tree
  - Events
  - Gate Types (And / Or)
  - Common Elements
  - Base Events or Elements
  - Software / Firmware vs. Hardware in FTA
- Common Causes of Failure
- Serial and Parallel Reliability Calculations using FTA Cut Set
- FTA Analysis using Numerical Approach (calculated or likelihood)
- FTA Analysis using Subjective Approach (Severity and / or Occurrence)
- Risk Mitigation and Taking Action
  - Risk Register
  - Color Coding the Base events related to Risk Levels
  - Criticality