PD618
Problem-solving for Engineers: Root Cause Analysis Fundamentals

Day One

- Overview of Root Cause Analysis Concepts and Practices
  - Introduction to Root Cause Analysis (RCA)
  - The need and the practice
- Practical Problem Solving
  - Defining a Problem
  - Strategies to Solve Problems
  - Understanding Causes and Its Levels
  - Finding Root Causes
  - Eliminating Root Causes
  - Proactive Problem Solving
- Case Studies & Hands-on Activity
- Root Cause Analysis
  - Defining Root Cause Analysis
  - Conducting Root Cause Analysis
- Case Study & Group Activity
- Tools for Problem Understanding
  - Problem Understanding
  - The Purpose and Applications of Flowcharts
  - Using Flowcharts
  - Checklists
  - Using Critical Incidents
  - Using Performance Matrices

Day Two

- Tools for Problem Cause Brainstorming
  - Problem Cause Brainstorming
  - The Purpose and Application of Brainstorming
  - Brainstorming Recording Templates
- Tools for Problem Cause Data Collection
  - Problem Cause Data Collection
  - Taking Advantage of Samplings
  - Steps in Using Samplings
  - Taking Advantage of Surveys
  - Using Check Sheets
  - Problem Cause Data Collection Checklist
- Case Study & Hands-on Activity
- Tools for Problem Cause Data Analysis
  - Understanding Problem Cause Data Analysis

  - The Purpose and Application of Histograms
  - Using and Interpreting Histograms
  - Using Relations Diagram
- Case Study & Hands-on Activity
- Tools for Root Cause Identification
  - Fundamentals of Root Cause Identification
  - Using Cause-and-Effect Diagrams
  - Using the Five Whys Method
  - Using the Fault Tree Analysis Technique

Day Three

- Tools for Root Cause Elimination
  - An Overview of Root Cause Elimination
  - Using DeBono's Six Hats
- Tools for Solution Implementation
  - Overview of Solution Implementation
  - Organizing the Implementation
  - Developing an Implementation Plan
  - Using Tree Diagrams
  - Creating Change Acceptance
  - The Purpose and Application of Force-Field Analysis
- Case Study & Hands-on Activity
- Selecting the Right Tool
  - What to Watch for When Using Tools and Techniques
  - Selecting the Right Tool
- Case Study & Hands-on Activity
- Example Cases and Practice