



Root Cause Analysis

(Basic DMAIC Problem Solving Skills)
(16 hours)

Audience and Purpose:

Course is designed for all employees at all levels who are involved in systematic process improvement and problem solving. Topics include guidelines for continuous process improvement, problem solving, root cause analysis and basic quality tools. Course is also an excellent introduction to six sigma basics and lean methodologies.

Course Objectives:

Upon completion of the course the participants will be able to:

- Identify a problem that requires improvement
- Define a problem in measurable terms
- Contain the problem while developing a long-term solution
- Collect and analyze data relevant to the problem of interest
- Analyze the system of causes and determine root cause
- Plan and implement solutions relevant to the root cause of the problem
- Evaluate the effectiveness of the improvement
- Determine opportunities for standardization
- Discuss how to realize the benefits of process improvements
- Examine the improvement process for lessons learned and new problems to solve

Software: JMP or Excel

Course Outline:

Define & Contain the Problem

Introduction to Root Cause Analysis and six sigma
Define the Problem
Contain the Problem
State the Problem, Objective, Goal, and Benefits
Perform Resource Analysis
Develop a High-Level Process Map

Measure the Problem

Define Data Collection Requirements
Process Reviews and Mapping
Develop Data Collection Plan
Define the Process Baseline

Analyze the Data and Determine Root Cause

Analyze all Relevant Data
Explore all Probable Root Causes
Determine and Summarize the Root Cause



Improve Performance

- Brainstorm Potential Solutions
- Evaluate Cost, Complexity, Impact, Benefit and Risk
- Communicate and Implement the Solution
- Verify the Solution

Control and Standardize Improvements

- Identify Opportunities and Owner for Standardization
- Determine the Controls Needed to Sustain the Gains
- Realize the Benefits of Improvement
- Reflect on the Improvement Process

Lean Basics

- Identification of Waste
- Value Stream Mapping
- Lean Performance Measures
- Lean Solutions