

Implementing Six Sigma Tools and Techniques On-Site Seminar

The concept of Six Sigma was introduced in the mid 1980's as a measure of process performance. Today, Six Sigma can be thought of as a metric, a methodology, and a management philosophy oriented toward achieving breakthrough performance.

Implementing Six Sigma Tools and Techniques is an in-depth Seminar covering the basic concepts, tools, and techniques needed to help your company succeed as a manufacturer in today's globally competitive environment.

Implementing Six Sigma Tools and Techniques is divided into four major sections and requires approximately 32 hours for presentation. Various presentation schedules are available to meet your requirements. The content can be customized to meet the needs of specific departments or personnel.

Seminar participants receive copies of Handbooks and Workbooks for each section of the program, a statistical calculator, and supplemental supplies and materials.

Call us to learn how to succeed in implementing Six Sigma tools and techniques at your company.

Seminar Outline:

Section 1 - Basic Statistical Tools and Techniques

Unit 1 - Introduction to SPC

- Statistical Process Control
- Quality Characteristics
 - Variables
 - Attributes
- Process Variation
 - Common Causes
 - Assignable Causes
- Distributions
 - Population
 - Samples
 - Types of Distributions
- Collecting Variables Data
 - Resolution
 - Zero Value
 - Observed Values
 - Using the Variables Data Form

Unit 2 - Frequency Tables

- Frequency Tables
- Making and Using Frequency Tables

Unit 3 - Histograms

- Histograms
- Making and Using Histograms

Unit 4 - Probability Plots

- Probability Plots
- Making and Using Probability Plots

Unit 5 - Mean and Standard Deviation

- Mean, Sample Mean, and Population Mean
- Standard Deviation, Sample Standard Deviation, and Population Standard Deviation
- Areas Under the Normal Curve

Unit 6 - Control Charts

- Control Charts
- Subgroups
- Mean
- Range
- Upper and Lower Control Limits
- Common Causes
- Assignable Causes
- Types of Control Charts

Unit 7 - Process Capability

- Histogram Method
- Capability Ratio
- Capability Index
- Normal Probability Plot Method
- Process Capability Studies
- C_{pk} and P_{pk}

Unit 8 - Actions and Options

- In Statistical Control and Capable
- In Statistical Control and Incapable
- Out of Statistical Control and Capable
- Out of Statistical Control and Incapable
- Options
- Summary

Section 2 - Control Charts and Related Techniques

Unit 1 - Types and Uses of Control Charts

- Introduction
- Statistical Process Control
- Quality Characteristics
 - Variables
 - Attributes
- Process Variation
 - Common Causes
 - Assignable Causes
- Distributions
 - Populations
 - Samples
 - Subgroups
- Types of Control Charts
 - Variables Control Charts
 - Attributes Control Charts
- Control Chart Theory
- Process Capability Studies
- Ongoing Process Monitoring and Control

Unit 2 - Collecting Variables Data

- Selecting Characteristics to be Charted
- Determining the Subgroup Size
 - Combining Process Streams to form Subgroups
- Determining the Sampling Interval

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11 Helmsford Way
Penfield, NY 14526-1971
Phone: 585-377-8340
Fax: 585-377-7569
www.iplusnet.com

Unit 3 - X Bar and R Charts

- X Bar and R Charts
- Making and Using X Bar and R Charts

Unit 4 - Interpreting Patterns

- Natural Patterns
- Unnatural Patterns
- Outliers
- Runs
- Sudden Change in Level
- Mixtures
 - Stable Mixtures
 - Unstable Mixtures
 - Stratification
 - Analyzing Mixtures
- Trends

Unit 5 - Determining Process Capability

- Estimates of the Standard Deviation
- Capability Index
- Capability Ratio
- Centering the Process
- The Process Capability Index C_{pk}
- The Meaning of Six Sigma Capability
- The Process Capability Index P_{pk}
- Parts Per Million Equivalents
- Establishing Standard Values for Control Limits

Unit 6 - PRE-Control

- PRE-Control
- Implementing PRE-Control

Section 2 - Control Charts and Related Techniques Supplement

Unit 1 - X and MR Charts

- X and MR Charts
- Making and Using X and MR Charts

Unit 2 - Target X Bar and R Charts

- Target X Bar and R Charts
- Making and Using Target X Bar and R Charts

Section 3 - Six Sigma Tools and Techniques – Part 1

Unit 1 - Implementing Six Sigma

- Overview of Six Sigma
 - Six Sigma as a Metric
 - Six Sigma as a Methodology
 - Six Sigma as a Management Philosophy
- DMAIC
 - Define
 - Measure
 - Analyze
 - Improve
 - Control

Unit 2 - Tools for Problem Solving

- Brainstorming
- Cause and Effect Diagrams
- Charts and Graphs
- Check Sheets
- Control Charts
- Cost Benefit Analysis
- Criteria Rating
- Designed Experiments
- Flow Charts
- Force Field Analysis
- Gantt and PERT Charts
- Histograms
- Pareto Charts
- Regression Analysis
- Paired Comparisons
- Pictographs
- Process Maps
- Failure Mode and Effects Analysis (FMEA)
- Surveys and Interviews
- Weighted Voting
- Additional Tools and Techniques

Unit 3 - Flow Charting and Process Mapping

- Flow Charting
- Process Mapping
- Creating Procedures and Work Instructions

Unit 4 - Pareto Diagrams

- Pareto Diagrams
- Making and Using Pareto Diagrams

Unit 5 - Cause and Effect Diagrams

- Cause and Effect Diagrams
 - Cause Enumeration Diagram
 - Dispersion Analysis Diagram
 - Process Analysis Diagram
- Making and Using Cause and Effect Diagrams
- Making and Using a Cause Enumeration Diagram

Section 4 - Six Sigma Tools and Techniques – Part 2

Unit 1 - Failure Mode and Effects Analysis

- Failure Mode and Effects Analysis (FMEA)
 - Severity Evaluation Criteria
 - Occurrence Evaluation Criteria
 - Detection Evaluation Criteria

Unit 2 - Control Plans

- Developing Control Plans
- Implementing Control Plans

Unit 3 - Regression Analysis

- Concepts and Terminology
 - Scatter Diagrams
- Linear Regression
- Making and Using Scatter Diagrams

Unit 4 - Design of Experiments

- Concepts and Terminology
- Simple Experiments
- Designed Experiments
- Advanced Experiments

Unit 5 - Lean Six Sigma

- Overview of Lean Manufacturing
- Concept of Lean Six Sigma
- Program Summary

For more information on our complete range of products and services, please visit us on the web, call, or write...

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