Six Sigma Green Belt Training Course Contents

scotland

Six Sigma Overview

What is Six Sigma ?
DMAIC Introduction
Implementing Six Sigma
Project Selection

Define

Overview
Team Project Charter
- Business Case
- Problem Statement

High Level Process Map (SIPOC)
Voice of the Customer
- Kano Model
- Critical to Quality Characteristics

Stakeholder Planning
Define Review

Measure

Overview
Identifying and Selecting Measures
- Y=f(X)

Types of Data
Introduction to Minitab
Basic Statistics and Normal Distribution
Data Collection Plan
Operational Definition
Sampling
Sample Size Calculation
Measurement Systems Analysis
- Gauge R&R Study
- Linearity and Bias Study
- Attribute Agreement Analysis

Visualising Data Using Minitab
- Understanding Variation
- Time Series Plots
- Frequency Plots
- Stratification
- Scatter Plots and Correlation
- Pareto Charts

Statistical Process Control
- Individuals Charts
- Interpreting Patterns in Control Charts
- Xbar R Charts

Process Capability
- Process Sigma Calculation - Discrete Data

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- Process Mapping
- Value Added Analysis

Focused Problem Statement
Identifying Potential Causes
Cause and Effect Diagram
5 Why's
Verifying Causes
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- p-value
- Testing for Normality

Hypothesis Testing
- t-test (two-sided)
- Chi-Sq test

Regression Analysis
- Simple Linear Regression

Design of Experiments
- Full Factorial Designs

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Improve

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Generating Potential Solutions
- Creativity Techniques

Evaluating and Selecting Solutions
Validating Solutions
Piloting
Risk Analysis - FMEA
Implementation Planning
Improve Review

Control

Overview
Process Control Plan
Standardisation
Process Monitoring
- Review of Control Charts
- Charts for Discrete Data

Evaluating Results
Project Closure
Control Review

Note: Course contents may be modified to suit participants' experience and client specific requirements.

Lean Six Sigma Green Belt Training Course Contents

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What is Lean Six Sigma ?
DMAIC Introduction
Comparison of DMAIC and Kaizen
Implementing Lean Six Sigma
Project Selection

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- Takt Time Analysis
- Identifying Bottlenecks
- Waste Walk

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Introduction to Design of Experiments
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Generating Potential Solutions
- Creativity Techniques
- Introduction to Cell Design
- Standard Work
- 5S

Evaluating and Selecting Solutions
Validating Solutions
Piloting
Risk Analysis - FMEA
Mistake Proofing (Poka Yoke)
Implementation Planning
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Process Capability
- Cp/Cpk
- Process Sigma Calculation - Discrete Data
- Process Sigma Calculation - Continuous Data

Measure Review

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Focused Problem Statement

Identifying Potential Causes
- Cause and Effect Diagram
- 5 Why's

Verifying Causes
Normal Distribution
- Central Limit Theorem
- p-value

Testing for Normality
- Dealing with Non-Normal Data

Multi-Vari Analysis
Hypothesis Testing
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- Paired t-test
- ANOVA - comparing means
- ANOVA - comparing variances
- Chi-Sq test
- Non-Parametric Tests
- Power and Sample Size

Regression Analysis
- Simple Linear Regression
- Multiple Linear Regression
- Curvilinear Regression
- Regression with Discrete X's
- Logistic Regression

Design of Experiments
- Full Factorial Designs
- Fractional Factorial Designs
- Screening Experiments
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Improve
Overview
Generating Potential Solutions
- Creativity Techniques

Evaluating and Selecting Solutions
Validating Solutions
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- Charts for Discrete Data
- EWMA Charts
- Recalculating Control Limits
- Out of Control Action Plans

Evaluating Results
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Introduction to Design for Six Sigma

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Product Family Matrix
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- Process Sigma Calculation - Discrete Data
- Process Sigma Calculation - Continuous Data

Overall Equipment Effectiveness (OEE)
Measure Review

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- Process Mapping
- Value Added Analysis
- Time and Work Analysis
- Work Flow (Spaghetti Diagrams)
- Takt Time Analysis
- Identifying Bottlenecks
- Waste Walk

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- Analyse Review

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Overview
Generating Potential Solutions
- Creativity Techniques
- Push vs Pull Systems
- Cell Design
- Balancing Workload
- Standard Work
- 5S
- Setup Reduction
- Total Productive Maintenance (TPM)

Evaluating and Selecting Solutions
Validating Solutions
Risk Analysis - FMEA
Mistake Proofing (Poka Yoke)
Piloting
Implementation Planning
Improve Review

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