



# SIX SIGMA GREEN BELT – COURSE OUTLINE

## Introduction to Program

- ◆ Introduction of Participants
- ◆ Introduction of Trainer
- ◆ Ground rules

## Overview of Lean Six Sigma

- ◆ What is Six Sigma - Definition
- ◆ Why to use Six Sigma - Benefits
- ◆ Where to Six Sigma
- ◆ When to use Six Sigma
- ◆ Who are Six Sigma change agents
- ◆ How to deploy Six Sigma
- ◆ History of Six Sigma
- ◆ Basic Terms of Six Sigma

## Define Phase

- ◆ Overview of Define Phase
- ◆ Project identification
- ◆ Team Selection
- ◆ Communication Management
- ◆ 9-3-1-0 Matrix
- ◆ ARMI Matrix
- ◆ GRPI Model
- ◆ Stakeholder Analysis
- ◆ Team Dynamics
- ◆ Cost of (poor) Quality
- ◆ VoC – Kano Model
- ◆ CTQ Drilldown chart
- ◆ Project Charter
- ◆ SMART Goals
- ◆ Exercise on Project charter
- ◆ Identification of CTQ
- ◆ SIPOC model
- ◆ Top down chart
- ◆ Functional Deployment chart
- ◆ VA / NVA
- ◆ Value Stream Mapping (VSM)
- ◆ Exercise on VSM
- ◆ Define Phase: Toll Gate review

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Define Phase

Measure Phase

Analyse Phase

Improve Phase

Control Phase



## SIX SIGMA GREEN BELT – COURSE OUTLINE

### Measure Phase

- ◆ Overview of Measure Phase
- ◆ Types of Data (Discrete, Continuous)
- ◆ Importance of data collection
- ◆ Measurement Scales (Nominal, Ordinal, Interval and Ratio)
- ◆ Basics of statistics
- ◆ Sampling vs. Population
- ◆ Descriptive Statistics vs. Inferential Statistics
- ◆ Sampling (Random, Stratified, Systematic, etc.)
- ◆ Sample Size Determination
- ◆ Measurement System Analysis (MSA) concept
- ◆ Measurement System Analysis (MSA) terminology
- ◆ Causes of Measurement Error
- ◆ Calibration System
- ◆ How to conduct MSA study
- ◆ Process Metrics
- ◆ Operational Definition of CTQ
- ◆ Defining Data Collection Plan for CTQ
- ◆ Mean, Median, Mode
- ◆ Standard Deviation, Range
- ◆ Defining measure of Central Tendency
- ◆ Central Limit Theorem
- ◆ Z value calculation and practical applications
- ◆ Process Capability
- ◆ Calculating Process Capability (Zmin, Cpk)
- ◆ Z-Shift
- ◆ Probability concepts (P)
- ◆ Probability - Commonly Used Distributions
- ◆ Probability –Other Distributions
- ◆ Measure Phase: Toll Gate review

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### Analyse Phase

- ◆ Overview of Analyse Phase
- ◆ Data Analysis Tools
  - ⇒ Cause and Effect Diagram
  - ⇒ Value Stream Mapping
  - ⇒ CVA, OVA, NVA Analysis
  - ⇒ Bottleneck Analysis
  - ⇒ Queuing analysis
  - ⇒ Affinity Diagram
  - ⇒ 5 Why analysis
  - ⇒ Pareto Analysis
  - ⇒ Sources of Variation
  - ⇒ Multi-vari analysis
  - ⇒ Failure Mode Effects & Analysis (FMEA)
  - ⇒ Design FEMA
  - ⇒ Process FMEA
- ◆ Comparative Methods
  - ⇒ Hypothesis Testing
  - ⇒ One to Standard comparison
  - ⇒ One to One comparison
  - ⇒ Multiple comparison
  - ⇒ 1 sample t Test
  - ⇒ 2 sample t Test
  - ⇒ ANOVA
  - ⇒ 1 p Test
  - ⇒ 2 P Test
  - ⇒ Chi Square Test
  - ⇒ Correlation Analysis
  - ⇒ Regression Analysis
  - ⇒ Toll gate review on Analyse phase

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## SIX SIGMA GREEN BELT – COURSE OUTLINE

### Improve Phase

- ◆ Overview of Analyse Phase
- ◆ Lean Improvement tools
- ◆ Kaizen
- ◆ 5S
- ◆ Visual Management
- ◆ Jidoka
- ◆ Poka-yoke
- ◆ 7 Wastes (TIMWOOD)
- ◆ Kanban
- ◆ TPS (Toyota Production System)
- ◆ JIT (Just in Time)
- ◆ Idea generation Techniques
- ◆ Brain Storming
- ◆ Mind Mapping
- ◆ Six Thinking Hats
- ◆ Lateral Thinking
- ◆ FMEA
- ◆ Best Practices
- ◆ Solution evaluation
- ◆ Pilot plan validation
- ◆ Toll gate review on Improve phase

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## SIX SIGMA GREEN BELT – COURSE OUTLINE

### Control Phase

- ◆ Overview of Control Phase
- ◆ Actual implementation plan
- ◆ Process Standardization
- ◆ Standard instructions
- ◆ Process evaluation sheet
- ◆ Statistical Process Control
- ◆ Process Variability
- ◆ Process Stability
- ◆ Process Capability
- ◆ Control Charts
- ◆ I-MR Chart
- ◆ X bar R Chart
- ◆ X bar S Chart
- ◆ NP Chart
- ◆ P Chart
- ◆ C Chart
- ◆ U Chart
- ◆ Process Review and Process Control
- ◆ Toll gate review on Control phase

### Concluding the session

### Examination & Feedback

### Certification Ceremony

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