

## Course Content for Lean Six Sigma Black Belt

- **Introduction**

- a. A brief history of Quality
- b. What is Quality (Definitions) and service or product
- c. Quality Gurus & their contribution to Quality
- d. Enterprisewide View
- e. Leadership
- f. Six Sigma Roles and Responsibilities
- g. Team Formation
- h. Team Facilitation
- i. Team Dynamics
- j. Time Management For Teams
- k. Team Decision making Tools
- l. Management and Planning Tools
- m. Team Performance Evaluation and Rewards
- n. Overview of DMAIC

- **Define**

- a. Important Stakeholders
- b. Impact on Stakeholders
- c. Critical To X Requirements
- d. Benchmarking
- e. Business performance measures
- f. Financial measures
- g. VOC
- h. Kano's Customer Satisfaction Levels
- i. Juran's customer needs
- j. Market research
- k. CTQ Flowdown
- l. QFD
- m. Performance Metrics
- n. Project Charter
- o. Charter Negotiation
- p. Project management plan and Baselines
- q. Project Tracking

- **Measure**

- a. Processes, Process characteristics, process flow metrics, inputs and outputs
- b. Process maps and Flow chart
- c. SIPOC
- d. Data Type & Measurement scale
- e. Data Collection
- f. Sampling strategies
- g. Fishbone Diagram
- h. Relational Matrices or Prioritization Matrix
- i. Basic Statistics
- j. Analytical Statistics
- k. Gauge R & R
- l. Process Capability Analysis

- **Analyze**

- a. Correlation and Regression Analysis
- b. Testing of Hypothesis
- c. FMEA
- d. Gap Analysis
- e. The Five Whys
- f. Pareto Diagram
- g. Tree Diagram
- h. Non-value added activities
- i. Cost of Poor Quality (COPQ)

- **Improve**

- a. DOE
- b. Poka-yoke
- c. 5S
- d. Kanban
- e. Standard Operations
- f. Operator work instructions
- g. Cycle time reduction and Takt time
- h. Continuous Flow Manufacturing
- i. SMED
- j. Kaizen and Kaizen Blitz
- k. Theory of Constraints (TOC)
- l. Risk analysis

- **Control**

- a. Statistical Process Control
- b. Other Control Tools
- c. Maintain Controls
- d. Sustaining Improvements

- **DFSS**

- a. DFSS

- **More on Lean**

- a. A Value Stream Map
- b. Lean is Speed
- c. Total Supply Chain
- d. Lean Six Sigma Logistics

- **Case Study 1**

- a. Case Study 1 Part 1
- b. Case Study 1 Part 2

- **Case Study 2**

- a. Case Study 2 Part 1
- b. Case Study 2 Part 2