



Course Content for Six Sigma Green Belt

- Introduction to Six Sigma
 - 1. History of Quality (Deming, Juran, JIT, Ishikawa, Taguchi, etc.)
 - 2. Evolution of Six Sigma
 - 3. Defining Six Sigma philosophy and objectives
 - 4. Overview of Six Sigma DMAIC process
- Stakeholders & Setting up a Six Sigma Project
 - 1. Identifying and Documenting stakeholder requirements
 - a. Identifying stakeholders and customers
 - b. Data collection and analysis
 - c. Determining critical requirements
 - 2. Project Selection Criteria
 - a. Identifying performance metrics
 - b. Using Financial criteria to evaluate project benefits
 - c. Maximizing project benefits for the organization
 - 3. Project Planning
 - a. Creating Project Charter
 - b. Charter Negotiation
 - 4. Managing Team Dynamics
 - a. Initiating teams
 - b. Stages of team evolution
 - c. Maslow's hierarchy of needs
 - d. Motivation Techniques
 - e. Conflict Resolution Techniques
 - f. Management / Leadership styles
 - g. Roles played by people in a project
 - 5. Important project management & planning tools





Six Sigma Methodology – Define

- Inputs Need for Six Sigma project, Executive management sponsorship, core team identified
- 2. Tools
 - a. Organisation hierarchy
 - b. High level process maps
 - c. High level Pareto charts
 - d. Idea generation and categorization tools
- 3. Outputs
 - a. Project charter
 - b. Established metrics
 - c. Problem statement
 - d. Roles & responsibilities

• Six Sigma Methodology – Measure

- 1. Objectives of Measure Phase
- 2. Inputs the outputs of the Define phase
- 3. Tools
 - a. Data collection tools and techniques
 - b. Measurement scales
 - c. Validation techniques (Gauge R & R)
 - d. Statistical distributions
 - e. Data mining
 - f. Run charts
 - g. Process map
 - h. Stakeholder tools
 - i. Process costs

4. Outputs

- a. Well defined processes
- b. Baseline process capability
- c. Process parameters affecting CTQs
- d. Cost of poor quality (COPQ)
- e. Measurement system





Six Sigma Methodology – Analyze

- 1. Objectives of Analyze Phase
- 2. Inputs outputs of the Measure phase
- Tools
 - a. Ishikawa diagram
 - b. Failure mode and effects analysis
 - c. Hypothesis testing
 - d. Process capability study
- 4. Outputs
 - a. Important causes of defects
 - b. Special and common causes of variation
 - c. DPMO and sigma level

• Six Sigma Methodology – Improve

- 1. Objectives of Improve Phase
- 2. Inputs outputs of the Analyze phase
- 3. Tools
 - a. Returns on investment
 - b. Solution design matrix
 - c. Design of experiment
 - d. Taguchi robustness concepts
 - e. Response surface methodology
 - f. Project planning and management tools
 - g. Prototypes

4. Outputs

- a. Cost / benefit for different solution
- b. Selection of solutions for implementation
- c. Implementation plan

• Six Sigma Methodology - Control

- 1. Objectives of Control Phase
- 2. Inputs outputs of the Improve phase





3. Tools

- a. Control plan
- b. Statistical process control
- c. Lean enterprise
- d. 5S
- e. Kaizen
- f. Kanban
- g. Total productive maintenance
- h. Measurement system reanalysis

4. Outputs

- a. Implemented solutions
- b. Revised measurement system
- c. Control plan for sustaining benefits
- d. Improves process capability
- e. Lessons learned

Case Study

- a. Case Study Part 1
- b. Case Study Part 2
- c. Case Study Part 3