

SSGB Certification

Classroom Program: 3 days
Online: 180 days

Course Description

Six Sigma Green Belt course focuses on providing students with an understanding of the various Six Sigma tools and techniques useful to improve the production process and minimize defects in the end product with a greater focus on the practical implementation of these tool and techniques in the organization

Course Objective

Upon completion of the Six Sigma Green Belt course, participants will learn how to:

- Identify project selection and evaluation criteria.
- Plan and execute six sigma projects
- Form and effectively lead a six sigma project team.
- Apply DMAIC (Define, Measure, Analyze, Improve, and Control) and various six sigma tools in process and quality improvement.
- Assess and manage project risk.
- Significantly increase profitability through six sigma projects.
- Avoid pitfalls in implementing six sigma.
- Integrate and enhance innovation and problem solving skills

Course Outcome

- This course aims to familiarize Participants with the tool and techniques, advantages, and challenges of the Six Sigma methodology.
- Participants will be equipped with the knowledge needed for production process improvement in their organizations and help their organizations adopt Six Sigma methodology.
- Participants have knowledge pertaining to and can anticipate issues related to the practical implementation of Six Sigma.
- Participants are armed with the proper tools to address, resolve, and take the lead on production issues in their organizations.
- Participants will develop superior problem solving skills that can be immediately applied in real world projects.

Audience Profile

- This course is for employees and organizations requiring a standardized approach to problem solving for the purpose of continuous improvement. This would include team leaders, supervisors, associates, Quality Assurance Engineers, Project Managers, Software Professionals, Practitioners, Quality Assurance team members, Working Executives and Senior Management that will dedicate a small portion of their time applying the DMAIC tools to their natural work area.
- Future managers who want to get certified as Green Belt in Six Sigma.
- Management and Engineering Students who are desirous to be more resourceful and employable.
- Project Management Professionals (PMP) who wants to earn PMI PDUs by learning nuances of Quality paradigm.
- Any other professional members who are doing research, innovations or consulting in process improvement practices.

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Course Outline

Introduction to Six Sigma

- History of Quality (Deming, Juran, JIT, Ishikawa, Taguchi, etc.)
- Evolution of Six Sigma
- Defining Six Sigma – philosophy and objectives
- Overview of Six Sigma DMAIC process

Stakeholders & Setting up a Six Sigma Project

- Identifying and Documenting stakeholder requirements
- Project Selection Criteria
- Project Planning
- Managing Team Dynamics
- Important project management & planning tools

Six Sigma Methodology – Define

- Inputs – Need for six sigma project, Executive management sponsorship, core team identified
- Tools
 - ✓ Organization hierarchy
 - ✓ High level process maps
 - ✓ High level Pareto charts
 - ✓ Idea generation and categorization tools
- Outputs
 - ✓ Project charter
 - ✓ Established metrics
 - ✓ Problem statement
 - ✓ Roles & responsibilities

Six Sigma Methodology – Measure

- Objectives of Measure Phase
- Inputs – the outputs of the Define phase

- Tools
 - ✓ Data collection tools and techniques
 - ✓ Measurement scales
 - ✓ Validation techniques (Gauge R & R)
 - ✓ Statistical distributions
 - ✓ Data mining
 - ✓ Run charts
 - ✓ Process map
 - ✓ Stakeholder tools
 - ✓ Process costs

- Outputs
 - ✓ Well defined processes
 - ✓ Baseline process capability
 - ✓ Process parameters affecting CTQs
 - ✓ Cost of poor quality (COPQ)
 - ✓ Measurement system

Six Sigma Methodology – Analyze

- Objectives of Analyze Phase
- Inputs – outputs of the Measure phase
- Tools
 - ✓ Ishikawa diagram
 - ✓ Failure mode and effects analysis
 - ✓ Hypothesis testing
 - ✓ Process capability study
- Outputs
 - ✓ Important causes of defects
 - ✓ Special and common causes of variation
 - ✓ DPMO and sigma level

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Six Sigma Methodology – Improve

- Objectives of Improve Phase
- Inputs – outputs of the Analyze phase
- Tools
 - ✓ Returns on investment
 - ✓ Solution design matrix
 - ✓ Design of experiment
 - ✓ Taguchi robustness concepts
 - ✓ Response surface methodology
 - ✓ Project planning and management tools
 - ✓ Prototypes
- Outputs
 - ✓ Cost / benefit for different solution
 - ✓ Selection of solutions for implementation
 - ✓ Implementation plan

• Outputs

- ✓ Implemented solutions
- ✓ Revised measurement system
- ✓ Control plan for sustaining benefits
- ✓ Improves process capability
- ✓ Lessons learned

Case Study

- Case Study Part 1
- Case Study Part 2
- Case Study Part 3

Six Sigma Methodology – Control

- Objectives of Control Phase
- Inputs – outputs of the Improve phase
- Tools
 - ✓ Control plan
 - ✓ Statistical process control
 - ✓ Lean enterprise
 - ✓ 5S
 - ✓ Kaizen
 - ✓ Kanban
 - ✓ Total productive maintenance
 - ✓ Measurement system reanalysis