

# Lean Six Sigma Black Belt Certification

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**Hours: 32 Hours**

### Course Overview

This program provides an in-depth understanding of Lean Six Sigma Black Belt concepts, tools, and methodologies. It focuses on continuous improvement, data-driven decision-making, and advanced problem-solving techniques through structured projects and practical applications.

### Target Audience

- Process improvement professionals
  - Quality and operations managers
  - Business excellence and CI leaders
  - Professionals leading Lean Six Sigma projects
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## Module 1: Lean Six Sigma Black Belt Foundations

- Lean Six Sigma Black Belt: Understanding and Significance
  - Continuous Improvement and Continual Improvements
  - An Assortment of Black Belt Projects
  - Lean Management
  - Lean Concepts in Detail
  - What is Six Sigma?
    - Origination
    - Features
    - Significance
    - Roles and Responsibilities
  - What is a Lean Six Sigma Black Belt?
    - Features
    - Significance
    - Roles and Responsibilities
  - Difference and Approach Toward Success
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## **Module 2: Define Phase – Business Understanding & Project Setup**

- Significance and Approach
  - Business Hurdles and Requirements
  - Voice of Customer (VOC)
  - Voice of Business (VOB)
  - Voice of Process (VOP)
  - Transparency on VOC, VOB, and VOP
  - Exercise to Understand the Above
  - Baseline Performance
  - Project Charter
  - SIPOC Approach
  - Process Mapping
  - Kano Model
  - Responsibility, Accountability, Consulting, and Informed (RACI) Matrix
  - People Management
  - Project-Associated Persons, Roles, and Responsibilities
  - Project Expectations, Scheduling, and Deliverables
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## **Module 3: Measure Phase – Data & Performance Measurement**

- Significance and Approach
- Significance of Right Measurements
- Prioritization Matrix
- PFMEA – Potential Failure Mode & Effect Analysis
- Data Types
- Stratification
- Measure of Central Tendency and Dispersion
- Measurement System Analysis (MSA) & Gage R&R
- Data Understanding
- Time Plots / Run Charts
- Diagrams, Plots & Charts
  - Control Charts
  - Frequency Plots
  - Pareto Diagrams
- Binomial and Poisson Distributions
- Sigma Calculation and Ratings
- Summary

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## **Module 4: Analyze, Improve & Control**

### **Analysis Tools**

- Cause & Effect Diagram
- 5 Why Analysis
- Tree Diagram and Affinity Diagram
- Regression
- Multi-Vari Analysis
- Hypothesis Testing
- Chi-Square Test
- Non-Parametric Tests
- Analysis of Variance (ANOVA)
- Confidence Intervals
- T-Test (Sample 1 & Sample 2)

### **Improvement & Control**

- Checklists
- Quality Control Plan
- Process Change Management
- Standardization
- Documentation
- Monitoring – Ongoing Project
- Poka-Yoke
- Training Planning and Execution
- Central Limit Theorem
- Control Charts
- Kaizen
- 5S Principles and Implementation
- Statistical Process Control