



## **Six Sigma (Black Belt) Training Course**

Project Based Immersive Learning Course

### **Six Sigma (Black Belt) Training Course Overview**

Sambodhi and Education Nest provide a comprehensive Six Sigma (Black Belt) training program, focusing on process improvement techniques. Six Sigma is a proven methodology that aims to improve process output quality by identifying and eliminating defects and reducing variability. The training covers various quality management methods, including empirical and statistical approaches. Each Six Sigma project follows a structured sequence of steps, targeting specific goals such as process time reduction, cost minimization, and enhanced customer satisfaction and profits. The course ensures a clear understanding of each concept through simplified explanations. Upon completion, participants will gain expertise in Six Sigma (Black Belt) and acquire essential fundamentals in this field. The training is led by an experienced and knowledgeable trainer who provides guidance and support throughout the program.

### **Benefits of Six Sigma (Black Belt) Training Course:**

The Six Sigma (Black Belt) course offers several benefits. As a Lean Six Sigma Black Belt, you will gain the skills to lead project teams and identify areas for improvement. The course validates your ability to streamline processes and enhance quality. By reducing waste, eliminating bottlenecks, and implementing efficient practices, you will learn how to reduce costs and increase overall efficiency.

The field of Six Sigma (Black Belt) offers numerous job opportunities globally, with top companies actively seeking professionals with these skills. The demand for skilled Six Sigma (Black Belt) candidates is consistently rising, making it a lucrative and promising domain for career growth.

## **Who should learn?**

The Six Sigma (Black Belt) is suitable for a wide range of individuals, including:

- IT Managers
- IT Analysts
- HR Managers
- Team Managers
- Project Managers
- Change Managers
- Finance Managers
- Program Managers
- Improvement Managers
- Quality System Managers
- Operational Line Managers
- Any other professional who would like to know more about lean six sigma black belt training

## **Why do you need Six Sigma (Black Belt) Training Course?**

### **Average Salary Growth:**

Professionals with a Six Sigma (Black Belt) certification earn competitive salaries, averaging over \$107,000 globally. In comparison, Management Analysts have an average annual salary of \$87,660, according to the US Bureau of Labor Statistics. Salary growth and earning potential vary based on industry, location, experience, and qualifications. The 14% annual job growth for Management Analysts indicates a positive career outlook. With organizations

valuing process improvement and operational efficiency, the demand for skilled Six Sigma (Black Belt) professionals is on the rise.

## **Industries:**

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The demand for Six Sigma (Black Belt) professionals is significant across various industries. Some industries and MNCs that value Six Sigma (Black Belt) expertise include manufacturing, Construction, Publishing, Management, Utilities, and Consulting firms. These sectors recognize the value of process improvement, quality control, and operational excellence. Here are some notable MNCs known for valuing Six Sigma methodologies and employing Black Belt professionals: Ford Motor Company, Procter & Gamble (P&G), Toyota Motor Corporation, Samsung Electronics, Honeywell International, Caterpillar Inc., Johnson & Johnson.

## **Position in Market:**

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According to a report by Grand View Research, the Six Sigma market was valued at USD 3.88 billion in 2020 and is expected to grow at a compound annual growth rate (CAGR) of 17.6% from 2021 to 2028. This growth indicates the increasing recognition and adoption of Six Sigma methodologies across industries. Which is faster than the average for all occupations?

## **Designations:**

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- Business Process Analyst
- Operations Manager
- Quality Analyst
- Process Improvement Specialist
- Quality Assurance Engineer
- Project Manager
- Quality Auditor
- Quality Engineer

## Why Six Sigma (Black Belt) Training Course from Education Nest

- **Free Demo on Request**
- **Live Interactive Learning**
- **Lifetime Access**
- **Flexible Schedules**
- **24x7 Support**
- **One on One Doubt Clearing**
- **Real Time Project-Based Learning**
- **Certificate Oriented Curriculum**

### **Key Skills Covered:**

- Application of Lean concepts
- Advanced statistical analysis
- Manage team dynamics
- Work with multiple levels
- Project prioritization matrix

## Six Sigma (Black Belt) Training Course Syllabus

### **Module 1: Introduction of Six Sigma**

- Introduction to Lean Six Sigma Green Belt

## **Module 2: Define Phase**

### **The Basics of Six Sigma**

- Meanings of Six Sigma
- General History of Six Sigma & Continuous Improvement
- Deliverables of a Lean Six Sigma Project
- The Problem-Solving Strategy  $Y = f(x)$
- Voice of the Customer, Business and Employee
- Six Sigma Roles & Responsibilities

### **The Fundamentals of Six Sigma**

- Defining a Process
- Critical to Quality Characteristics (CTQ's)
- Cost of Poor Quality (COPQ)
- Pareto Analysis (80:20 rule)
- Basic Six Sigma Metrics

### **Selecting Lean Six Sigma Projects**

- Building a Business Case & Project Charter
- Developing Project Metrics
- Financial Evaluation & Benefits Capture

### **The Lean Enterprise**

- Understanding Lean
- The History of Lean
- Lean & Six Sigma
- The Seven Elements of Waste
- 5S: Straighten, Shine, Standardize, Self-Discipline, Sort

## **Module 3: Measure Phase**

### **Process Definition**

- Cause & Effect / Fishbone Diagrams
- Process Mapping, SIPOC, Value Stream Map
- X-Y Diagram
- Failure Modes & Effects Analysis (FMEA)

### **Six Sigma Statistics**

- Basic Statistics
- Descriptive Statistics
- Normal Distributions & Normality
- Graphical Analysis

### **Measurement System Analysis**

- Precision & Accuracy
- Bias, Linearity & Stability
- Gage Repeatability & Reproducibility
- Variable & Attribute MSA

### **Process Capability**

- Capability Analysis
- Concept of Stability
- Attribute & Discrete Capability
- Monitoring Techniques

## **Module 4: Analyze Phase**

### **Patterns of Variation**

- Multi-Vari Analysis
- Classes of Distributions

### **Inferential Statistics**

- Understanding Inference
- Sampling Techniques & Uses
- Central Limit Theorem

### **Hypothesis Testing**

- General Concepts & Goals of Hypothesis Testing
- Significance; Practical vs. Statistical
- Risk; Alpha & Beta
- Types of Hypothesis Test

### **Hypothesis Testing with Normal Data**

- 1 & 2 sample t-tests
- 1 sample variance
- One Way ANOVA

### **Hypothesis Testing with Non-Normal Data**

- Mann-Whitney
- Kruskal-Wallis
- Mood's Median
- Friedman
- 1 Sample Sign
- 1 Sample Wilcoxon
- One and Two Sample Proportion

- Chi-Squared (Contingency Tables)

## **Module 5: Improve Phase**

### **Simple Linear Regression**

- Correlation
- Regression Equations
- Residuals Analysis

### **Multiple Regression Analysis**

- Non- Linear Regression
- Multiple Linear Regression
- Confidence & Prediction Intervals
- Residuals Analysis
- Data Transformation, Box-Cox

### **Designed Experiments**

- Experiment Objectives
- Experimental Methods
- Experiment Design Considerations

### **Full Factorial Experiments**

- 2k Full Factorial Designs
- Linear & Quadratic Mathematical Models
- Balanced & Orthogonal Designs
- Fit, Diagnose Model, and Center Points

### **Fractional Factorial Experiments**

- Designs
- Confounding Effects



- Experimental Resolution

## **Module 6: Control Phase**

### **Lean Controls**

- Control Methods for 5S
- Kanban
- Poka-Yoke (Mistake Proofing)

### **Statistical Process Control (SPC)**

- Data Collection for SPC
- I-MR Chart
- Xbar-R Chart
- U Chart
- P Chart
- NP Chart
- Xbar-S Chart
- CuSum Chart
- EWMA Chart
- Control Methods
- Control Chart Anatomy
- Subgroups, Impact of Variation, Frequency of Sampling
- Center Line & Control Limit Calculations

### **Six Sigma Control Plans**

- Cost-Benefit Analysis
- Elements of the Control Plan
- Elements of the Response Plan

## **Career Support**

### **Profile Building:**

At Sambodhi and Education Nest, we provide the services of experienced professionals who can offer personalized assistance in crafting your CV and online profiles. They take into account your unique educational and experiential background, ensuring that your job application stands out from the rest.

### **Interview Preparation:**

The upcoming interview preparation service will provide individuals with personalized one-on-one sessions tailored to their specific needs. Additionally, if required, the service will offer the option for mock interviews, allowing individuals to practice and refine their interview skills in a simulated environment.

### **Job Referrals:**

At Education Nest, we receive a variety of job requirements from diverse sources such as organizations, our clients, HR consultants, and a vast network of Education Nest currently employed in different companies. We strive to meet these varied requirements to the best of our abilities.

### **Continuous Support:**

At Sambodhi and Education Nest, we provide ongoing support to our learners for as long as they need it. Many of our learners have received multiple job offers and promising employment opportunities as a result of the skills they acquire during our program.