Lean Six Sigma Practitioners Black Belt - week 1 Training

Duration: **5 Day**

BILGINÇ IT Academy
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- **Manage complex process improvement initiatives using advanced statistical analysis with Minitab.**
- **Designed for experienced Green Belt professionals looking to improve larger and more challenging processes.**
- **Combine practical Minitab exercises with real-world DMAIC project applications to strengthen your improvement capabilities.**

The **Lean Six Sigma Practitioners Black Belt Training** equips experienced **Green Belt professionals** with the advanced tools, methodologies and techniques required to manage complex process improvement projects successfully.

The complete programme runs for **10 days across two separate training weeks**, with each week consisting of five days (**LSSBBWK1 and LSSBBWK2**). The first week focuses on the statistical methods and practical techniques that support advanced process analysis and improvement activities.

As established business improvement methodologies, **Lean** and **Six Sigma** help organisations increase value for customers, employees and shareholders by reducing process variation and eliminating waste. Together, these approaches support greater operational efficiency and more sustainable business improvement outcomes.

The training combines **theoretical knowledge with hands-on practical exercises**, allowing participants to strengthen their technical understanding and develop confidence in applying advanced statistical techniques.

Throughout the programme, learners work with **Minitab to perform statistical analyses**, evaluate process performance and identify improvement opportunities. Practical activities help participants build the capabilities needed to **analyse complex business processes**, **make data-driven decisions** and **manage improvement and transformation initiatives using advanced analytical tools**.

Prerequisites

Participants are expected to meet the following requirements before attending the training:

- Delegates must have completed a **Lean Six Sigma Green Belt training course**, either through **Bilginç IT Academy** or another training provider.
- Previous completion of a **Green Belt improvement project using the DMAIC framework** is strongly recommended.
- Participants must have **a second improvement project identified for completion after the training**, as this is required for accreditation.
- **Access to Minitab software** is necessary throughout the course. Bringing a personal computer is therefore highly recommended.

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Suggested Pre-reading

To prepare for the technical and statistical topics covered during the programme, participants are encouraged to review the following publications:

- **Lean Six Sigma and Minitab** – Quentin Brook
- **Statistics Without Tears** – Derek Rowntree

Who Should Attend

This training is intended for **experienced Lean Six Sigma Green Belt professionals** who want to expand their existing capabilities and apply advanced improvement techniques to larger, more complex projects.

It is particularly suitable for individuals seeking to strengthen their expertise in **statistical process analysis**, lead significant improvement initiatives and gain recognition as **Lean Six Sigma Black Belt practitioners**.

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What You Will Learn

The **Lean Six Sigma Practitioners Black Belt Training** is delivered over **10 days, divided into two five-day sessions**. The programme aims to develop experienced Green Belt professionals into **self-sufficient process improvement practitioners** who can analyse improvement opportunities, evaluate potential solutions and optimise business processes using **Minitab**.

By the end of the training, participants will be able to:

- Explain the **core principles and stages of the Six Sigma DMAIC methodology**.
- Use **advanced problem-solving techniques** to identify process issues, analyse their causes and implement improvements within organisations.
- Perform **Voice of the Customer (VOC)** and **Critical to Quality (CTQ)** analyses to identify and define customer requirements.
- Apply **data collection planning** and **Measurement Systems Analysis (MSA)** to assess and validate process inputs.
- Evaluate process performance through statistical methods, including **process capability analysis** and **control charts**.
- Lead **cross-functional teams** in structured **Lean Six Sigma process improvement projects**.
- Apply the **Define and Measure phases of DMAIC** to real-world improvement initiatives using suitable templates, tools and documentation.

This training provides experienced Green Belt professionals with the opportunity to advance their expertise in **statistical process analysis**, **structured problem-solving** and **data-driven improvement**, supporting their progression towards **Lean Six Sigma Black Belt** proficiency.

Training Outline

Week 1 focuses on the **Define, Measure and Analyse phases of the DMAIC methodology**, introducing advanced techniques for understanding, measuring and evaluating process performance.

1. Define

- **Quality Function Deployment (QFD)**

2. Measure

- **Balanced Scorecards**

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- **Introduction to Minitab**
- **Fundamental Statistical Concepts**
- **Central Limit Theorem**
- **Measurement Systems Analysis (MSA)**
- **Measurement Systems Analysis for Continuous Data**
- **Measurement Systems Analysis for Discrete Data**
- **Standardised Normal Distribution**
- **Process Capability: Cp and Cpk**
- **Process Efficiency Calculations**

3. Analyse

- **Creating and Interpreting Graphs Using Minitab**
- **Performing Statistical Tests with Minitab**
- **Hypothesis Testing for Continuous Data**
- **One-Sample t-Test**
- **Two-Sample t-Test**
- **Homogeneity of Variance Test**
- **Balanced Analysis of Variance (ANOVA)**
- **Hypothesis Testing for Discrete Data**
- **One and Two Proportion Tests**
- **Chi-Squared Test**
- **Analysis of Non-Normal Data**
- **Mann-Whitney U Test**
- **Mood's Median Test**