



# Lean Six Sigma Black Belt

Become an expert, professional problem-solver



## Course At-A-Glance

**Appropriate For:** Anyone desiring the skills of a Lean Six Sigma Black Belt, and those who seek to become professional problem solvers

**Length:** 5 weeks (1 full week each month for 5 months), 180 hours of instruction

**Cost:** \$12,500

**CEUs:** 18

**Certification Support:** Lean Methods Group Certification Portal, Master Black Belt Mentor

## Lean Method Group's World-Class Training & Certification

Lean Methods Group's training offers exceptional education and experience. See why we're a favored provider to organizations and individuals worldwide.

- Hands-on, experiential training
- Peer-to-peer learning
- Minitab license included
- Best educators in the industry
- Certifications recognized globally

## About Lean Six Sigma Black Belt

Lean Six Sigma Black Belt training gives you the skills you need to lead teams through breakthrough improvements and support strategic objectives in any function or department of any organization.

Unlike less rigorous courses, Lean Methods Group's Black Belt course prepares you to solve a wide variety of difficult problems across a wide spectrum of industries, including transactional, service, manufacturing and healthcare—drawing on both quantitative and qualitative methods from the complementary domains of Lean and Six Sigma.

Additionally, this course prepares Black Belts for their role as change agents in training and mentoring Green Belts and other resources, facilitating and leading projects, supporting broader performance excellence efforts and serving as internal consultants.

Another differentiating aspect of this course is the inclusion of creative-thinking modules that can be used within

*"Black Belt certification has enabled me to deliver significant productivity and quality benefits to the business ... Black Belt training also definitely assisted me in obtaining a global process excellence leadership role."*

**–Bruce Meuli, Black Belt, UBS Bank**

the structure of DMAIC (Define-Measure-Analyze-Improve-Control) to dislodge a team's thinking when members are mired in their own assumptions and familiarity with their processes.

The duration of this course is spread out over a five-month time frame because the scope and depth of learning is extensive. Lean Methods Group expert instructors lead lectures, group exercises, process and tool simulations, and individual exercises to transfer knowledge and challenge students to extract the most value from the experience. Participants also gain significant skills in graphical and statistical analysis using Minitab software.

Between classroom sessions, candidates work on their assignments and workplace improvement project. Each candidate has a designated Lean Methods Group Master Black Belt program manager who provides mentoring and support. To further enhance the certification process, Lean Methods Group's Certification Portal provides a structured and supportive phase-based approach to completing project work and achieving certification.

## Learning Objectives

Upon completion of this course, participants will be able to:

- Apply such Lean concepts as 5S, waste reduction, process mapping, value stream mapping and mistake proofing.
- Define, scope and execute DMAIC projects.
- Apply the DMAIC methodology to business issues and transition projects from phase to phase.
- Apply basic and more advanced statistical analyses to determine the relationship between key inputs and process outputs.
- Effectively manage team dynamics and understand how to work with multiple levels of leadership to remove barriers and achieve project success.
- Close projects and hand over control to process owners.
- Present projects to instructors, peers and managers.

## Agenda

### Week One DMA

Lean Six Sigma Overview  
Lean Six Sigma Roadmap and Tools  
Selecting the Right Methodology  
Simulation Exercise (round 1)  
Project Definition and Scope  
Developing Project Objectives  
Developing Project Charters  
Defining Current State

Process Mapping  
The 8 Types of Waste  
Identification of Value  
Value Stream Mapping  
Introduction to Basic Statistics  
Delivery Simulation (round 2)  
Data Collection  
Measurement System Analysis  
Capability Analysis

Meeting Facilitation Skills  
Project Planning

### Week Two AIC

Basic Process Analysis  
Graphical Data Analysis  
Statistical Data Analysis  
Failure Mode and Effects Analysis (FMEA)  
Generate and Evaluate Solutions

## Agenda - Continued

Creative Thinking Techniques  
Pilot and Implement Solutions  
Delivery Simulation (round 3)

Control Plans

Mistake Proofing

Statistical Process Control

Transition and Project Closure

Identify X's (Fishbone and Cause & Effect Matrix)

### Week Three Tools

Assess your Learning Styles

Review of LSS

Review of LSS Roadmap & Tools

Project Charters

Advanced Basic Statistics

Introduction to Minitab

Define the "As Is" Process

Measurement System Analysis

Data Collection Methods

Stability Analysis

Capability Analysis

Change Leadership

### Week Four Tools

Project Reviews

Graphical Data Analysis

Introduction to Hypothesis Testing

Central Limit Theorem

Confidence Intervals

Means Testing

Variance Testing

Flow

Proportions Testing

Contingency Tables

Pull

Kanban

Sample Size Selection

One Way Analysis of Variance (ANOVA)

Regression & Correlation

DOE - Full Factorials

Introduction to Design of Experiments (DOE)

### Week Five Tools

Project Reviews

Introduction to Logistic Regression

Advanced Regression

DOE - Full Factorials

DOE - 2K Factorial Designs

DOE - 2K Fractional Factorials

DOE - Attribute DOE

Solution Generation & Selection Review

Creative Thinking Techniques

Control Charts

Lean Tools Review

Control Methods

Attribute SPC

Introduction to Surveys

Introduction to Statistical Process Control (SPC)

## Certification Requirements

To achieve certification, students must complete all assignments, pass all exams and complete one workplace improvement project.

To register for this course, visit [www.leanmethods.com/black-belt](http://www.leanmethods.com/black-belt) or call +1 (303) 827-0010.