

Management and Strategy Institute, LLC.

Lean Six Sigma Master Black Belt Certified (LSSMBB)

Course of Study

Introduction

Six Sigma focuses on measuring and quantifying the impact of an improvement project. It requires buy-in across the business for the project to make changes based upon those measurements irrespective of personal views. Guesswork and assumptions have no place, it is a precise process.

The goal of the Management and Strategy Institute is to teach you the key competencies required to function in the role of a **Lean Six Sigma Master Black Belt**. A Master Black Belt requires strong leadership and project management skills, coupled with an understanding of statistical process and advanced Six Sigma knowledge. As you go through the training material you will learn the competencies listed below.

The LSSMBB certification consists of two exams:

Exam #1: Timed, online exam. It consists of approximately 50 questions and has a required passing score of 70%. You will have 120 minutes to complete this exam. This exam focuses primarily on Leadership and Project Management skills.

Exam #2: Timed, online exam. It consists of approximately 70 questions and has a required passing score of 70%. You will have 150 minutes to complete this exam. This exam focuses primarily on advanced Six Sigma competences.

Competencies

This course of study covers the following competencies:

1) Strategic Organizational Leadership:

- What Makes a great leader
- Leadership
- Suitable Environments
- Goals
- Circle of Influence
- Tactics
- Strategy and Diplomacy
- Maslow's Hierarchy
- Management Hierarchy
- Introversion
- Extroversion
- Temperament
- Working with Others
- Approach / Creativity
- Mind Mapping
- Communication
- How to Coach
- How to Convince
- How to Give Feedback
- Boost your Team
- Encourage
- How to Criticize
- Get Results
- How to Delegate
- Leadership Styles
- Increasing Maturity
- SWOT Analysis
- Risk Management

2) Project Management:

- Mission
- PM vs Team Leading
- Setting up project objectives
- Identifying scope
- Stakeholders and clients
- Project Planning
- Project life cycles
- Work breakdown structures
- Deliverables
- Estimating time and cost
- Resource allocation
- Setting up Gantt charts
- Precedence networks Risk management
- Creating contingency plans
- Clients and Stakeholders
- Effective communications
- Influencing key people
- Effective feedback
- Productive meetings
- Boost creativity
- Effective brainstorming
- Meeting frequency
- Project Close
- Stakeholder Acceptance
- Final documentation
- Marketing
- Monitoring
- Effective decision making
- Project Progress

3) Voice of the Customer:

- What is VoC
- Focus of VoC
- Effective methods for collecting
- Applying to DMAIC

4) Gage R&R:

- What is Gage R&R
- When is it used
- Understanding Variation
- The Gage Study
- Repeated measurements
- Selecting part samples
- Equipment variation (EV)
- total tolerance (TT)
- Average and Mean Report

5) Root Cause Analysis:

- What is Root Cause?
- Benefits
- standard process
- Importance of the root cause
- When to perform
- “no blame” environment
- Corrective Action
 - Immediate action
 - Permanent root cause CA
 - Preventive (Systemic)
- Problem Solving Process
- 5W2H
- Cause-Effect Diagram
- Corrective Action Plan
- Verification vs. Validation
- The Problem Solving Process
- Examples and Exercises

6) Value Streams:

- What is a Value Stream
- Types of Value Streams
 - 3 enterprise value streams
- History of Value Streams
 - Toyota
- Identifying the Value Stream
- Eight Service Industry Wastes
- Office Process Waste
- Lean Office
- Value Stream Mapping
- flows of information
- Process Data Box
- Objective for Every VS
- Current State
- The Future State
- takt time
- Administrative Mapping
- Implementing Change
- Roadblocks

7) Design of Experiments (DoE):

- What is Design of Experiments?
- Method
 - Step 1: Model Variables
 - Step 2: Set Variable Targets
 - Step 3: Experimental Plan
 - Step 4: Testing
 - Step 5: Analysis
- Effects, Replicates & Interactions
- DoE Goal
- Model Variables
- $y = f(x_1, x_2, x_3, \dots)$
- Design variables
- noise variables
- Experimental Plan
- Testing
- Analysis
- Determine β coefficients
- Replicates

8) Poka Yoke:

- What is Mistake Proofing?
- Everyday Examples
- Effectiveness & ROI
- Error Proofing and SPC
- Inspection Techniques
- Types of Poka Yokes

9) Failure Modes and Effects Analysis (FMEA):

- What is FMEA?
- History
- Benefits
- Applications
- Procedure
- Exercise
- Summary

10) Hoshin Kanri:

- Definition of Hoshin Kanri
- History of Hoshin Kanri
- Introduction to Hoshin Kanri
- Implementing Hoshin Kanri
- Initial Considerations
- High Performance Culture
- Critical Behaviors
- Fundamental Systems
 - Daily Management System
 - Cross-Functional Mngt System
- Plan Categories
- Business Fundamental Plans
- Measuring Performance
- Breakthrough Performance Plans

11) Kaizen:

- What is Kaizen?
- History
- Identify the Customer
- Types of Waste
- How to Kaizen
- The Kaizen Blitz
- Roadblocks

12) Push vs. Pull:

- Why Pull?
- The Problem of Inventory
- Just In Time
- Kanban
- One Piece Flow
- Standard Work & Takt Time
- Smoothing & Leveling

13) Statistical Process Control:

- What is Statistical Process Control
- Variability
- Control Charts
- Process Capability Cp
- Measuring Instruments
- Repeatability & Reproducibility

14) Theory of Constraints:

- Introduction to Constraints
- Five Steps Of Theory of Constraints
- Drum Buffer Rope
- Issues with TOC
- Measurements & Financial Issues

15) 5S and Visual Controls:

- What is 5S?
- 5S and Lean Enterprise
- Elements of 5S
 - Sort
 - Straighten
 - Shine
 - Standardize
 - Sustain
 - Safety
- Visual Workplace
- Implementation plan
- Summary

Learning Resources

Recommended:

Material included with your purchase is recommended reading.

- Free online training material provided by MSI. The material includes everything you will need to learn to pass the exam. This material is included for free with the purchase of your exam. It is in digital form, and available immediately after payment.

Optional, but highly recommended:

This material is not required, however it will assist you in becoming a Six Sigma Master Black Belt.

- Thomas Pyzdek (March 2003) The Six Sigma Project Planner : A Step-by-Step Guide to Leading a Six Sigma Project Through DMAIC, ISBN-13: 978-0071411837
- T. M. Kubiak (April 2012) The Certified Six Sigma Master Black Belt, ISBN-13: 978-0873898058

Preparing for Success

In order to successfully complete the LSSMBB exam, you will need to make sure you have the appropriate resources to support your learning.

- A quiet location, free from distraction.
- Internet access.
- Current (newest) version of Internet Explorer, Firefox, or Chrome browser.
- Take study notes while going through the training.
- When you are ready to take the first exam, you should allot 2-hours of time.
- When you are ready to take the second exam, you should allot 2.5-hours of time.

Frequently Asked Questions

What happens if I fail one of the exams?

- You are given two additional attempts to pass the exam, per exam, at no additional cost.