Black Belt Lean Six Sigma

Description

The Lean Six Sigma Black Belt training guides you toward advanced expertise in continuous improvement. It builds on the knowledge gained at the Green Belt and Yellow Belt levels to deepen the DMAIC methodology. You will learn how to clearly define a project, measure its performance, analyze data, identify key levers for action, and implement sustainable solutions. Practical workshops, focused on real-world cases, help you master statistical and methodological tools. This pragmatic approach prepares you to lead strategic, high-impact projects and to develop a comprehensive vision of processes.

A certification- and practice-oriented training

The Black Belt program also prepares you for the IASSC Certified Lean Six Sigma Black Belt exam. It provides complete support to ensure success in this internationally recognized certification. You will strengthen not only your technical expertise but also your managerial skills, enabling you to guide teams and monitor projects effectively. This dual focus enhances your credibility and broadens your career opportunities. You will learn to engage stakeholders, solve complex problems, and maintain results over time. Thanks to a balance of theory and practice, you become a key driver of performance and organizational transformation.

Course Content
Module 1: Define phase

- Customer requirements
- Project charter
- Problem statement
- Project scope
- Goals and objectives
- Project performance measures
- Project monitoring
- Stakeholder analysis
- Measurable customer requirements
- Process mapping
- SIPOC

Module 2: Measure phase

- Process characteristics
- Input and output variables
- Process flow parameters
- Process analysis tools
- Data collection
- Types of data
- Measurement scales
- Sampling methods
- Measurement systems, methods, and system analysis
- Basic statistics
- Basic terms

- Central limit theorem
- Descriptive statistics
- Graphical methods
- Valid conclusions
- Probability
- Process capability
- Process capability indices
- Process performance indices
- Short-term and long-term capability
- Process capability for non-normal data
- Process capability for attribute data
- Process capability studies and specification versus performance

Module 3: Analyze phase

- Overview of data analysis
- Pareto analysis
- Gap analysis
- Root cause analysis
- Waste analysis
- Histogram / Frequency plot
- Cause and effect analysis
- Correlation diagram
- Multivariate analysis
- Correlation coefficient
- Regression
- Multivariate tools
- Data analysis attributes
- Hypothesis testing
- Terminology
- Statistics vs practice
- Importance
- Sample size
- Design of experiments
- Failure modes and effects analysis (FMEA)

Module 4: Improve phase

- Generate creative solutions
- Brainstorming
- Analysis and selection of solutions
- Decision matrix
- Autonomous maintenance / TPM
- Quick changeover / SMED
- Line balancing / Operator balance charts
- Kanban / Pull systems
- Kaizen events
- Pilot testing
- Full-scale implementation
- Creativity and innovation
- Eliminate, combine, redesign, simplify (ECRS)
- Design of experiments (DOE)

- Waste elimination
- Cycle time reduction
- Theory of constraints, Kaizen and Kaizen Blitz (TOC)
- TRIZ
- Risk analysis and mitigation

Module 5: Control phase

- Elements of a control plan
- Statistical process control
- Objectives
- Choice of variables
- Control chart selection
- Control chart analysis
- Other control tools
- Total productive maintenance
- Maintaining controls
- Measurement system re-analysis
- Control plan
- Continuous improvement
- Documentation
- Design for Six Sigma (DFSS) frameworks and methodologies
- Common DFSS methodologies
- Customer expectations
- House of quality
- Critical quality deployment
- Critical parameter management
- Design for X (DFX)
- Robust design and processes (special design tools)

Lab / Exercises
This course offers:

- Practical exercises
- Group Restitution
- Case Scenarios

Documentation

- Digital course material included

Exam
This course prepares to the exam IASSC Certified Lean Six Sigma Black Belt.
Participant profiles

- Quality technicians and engineers
- Production and operations managers
- Project managers and consultants
- Continuous improvement managers

Prerequisites
Have followed the course or have the knowledge cover by: Green Belt Lean Six Sigma
Objectives

- Define and scope a Lean Six Sigma project
- Measure process performance
- Analyze data and identify root causes
- Improve processes with practical solutions
- Implement sustainable control methods
- Deploy Lean Six Sigma tools in the organization
- Prepare for and pass the Black Belt certification

Description
Black Belt Training
Niveau
Avancé
Classroom Registration Price (CHF)
2950
Virtual Classroom Registration Price (CHF)
2800
Duration (in Days)
3
Reference
LSS3-BLACKBELT