Online
Lean Six Sigma
Black Belt Training

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Summary

Agenda
- Survey
- Black Belts vs Green Belts
- Overall content
- Certification process
- Project selection
- Prerequisites
- Setup needed

What is a Black Belt
- A Lean Six Sigma Black Belt is a trained improvement agent who demonstrates change management skills, project management skills, team leadership, and interpersonal skills.
- Black Belts can bring breakthrough improvements.

Overall content
- Change management tools
- Root cause analysis tools
- Statistical tools
- Project management
- Artificial intelligence tools

Certification & training
- Coaching and ongoing support

Project Selection Criteria
- The project is connected to a recognized need, ensuring a strategic fit.
- No minimum dollar value, still SMART.
- The project has a measurable benefit that can be confirmed with data.

Pre Requisites
- 2 years of work experience in any field.
- Lean Six Sigma Green Belt Certification or equivalent.
- Equivalent experience and exposure.
- Additional training pre Black Belt.

Setup Needed
- Registration and payment.
- Internet connection, laptop.
- Microsoft Windows.
- Template supplied.
- Minitab supplied.

Q&A

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Agenda

- Survey
- Black Belts vs Green Belts
- Overall content
- Certification process
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- Pre-requisites
- Setup needed
Survey results

- Organizational needs
- Advanced methods and tools
- Motivations
- Decision making
- Upgrade skills
- Next steps

Know how
What is a Black Belt

A Lean Six Sigma Black Belt is a trained improvement agent who demonstrates change management skills, project management skills, team leadership, and understands team dynamics.

Black Belts aim for **breakthrough improvements**.
What is a Black Belt

• Lead complex and multifunctional process improvement or process design projects.
• Manage projects using a roadmap that encompasses change management.
• Identify and optimize the key factors that are linked to the customers needs in a process or product.
• Analyze data and information in order to demonstrate and prove the way forward.
• Achieve successful breakthroughs in environments where resistance is a challenge.
Typical role of a Black Belt

- Lead, as a team leader, complex cross functional projects.
- Provide technical support and mentoring to Black Belts and Green Belts, including on the most recent tools.
- Act as an internal consultant and a Lean Six Sigma expert.
- Participate to the governance.
- Establish procedures, best practices.
Overall content

- Change management tools
- Team decision making tools
- Analysis tools
- Statistical tools
- Project management
- Artificial Intelligence tools
Module I - Recognize

1. Selecting the right projects to improve
2. Strategic planning / Hoshin Kanri
3. Multi generation project plans
Module I - Define

1. Defining the project
2. Teamwork and team building
3. Overview of process management
4. Project management tools and principles
5. Change management tools
6. Leadership styles
7. Artificial Intelligence / Machine Learning: applications and overall process
Module II - Measure

1. Voice of the customer and survey techniques
2. Mapping the process
3. Value Stream Mapping
4. Measurement system analysis (Gauge R&R, continuous, attribute)
5. Advanced Process capability for normal and non normal data
6. Coaching, giving feedback
Module III - Analyze phase

1. Sample size calculation
2. Hypothesis testing, ANOVA
3. Correlation and regression
4. Selection of the factors to improve
5. AI/ML
   1. Supervised (KNN, LR)
   2. And unsupervised (K Means, PCA) learning
Module IV - Improve phase

1. Workshops guidelines and facilitation
2. Process design methodology including the Pugh matrix
3. Scenario evaluations and selection, creativity
4. Design of experiment (full, fractional)
5. Pull: Kanban, heijunka
6. Pilot and implementation plan
7. Change management
8. ML/AI
   1. Neural networks and deep leaning notions
   2. Reinforcement learning
Module IV - Control phase

1. Setting a control plan (recap)
2. Evaluation of the gains
3. Control charts, SPC (recap only)
4. Exam I and II
Certification & training

Introduction
4hr Webinar
Certification Project Identification

Recognize Define
2 day seminar online
Recap Exam

Define Measure
2 day seminar online
Recap Exam

Analyse
2 day seminar online
Recap Exam

Improve Control
2 day seminar online

Final Exam
Written Exam Practical Exam

Coaching and work on the project

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Black Belt Certification Requirements

Accomplishments

• Complete 1 project from Definition to implementation, including controls
• Pass interim exams
• Pass final exam

Once a Belt, Always a Belt
Black Belt Certification Requirements

Support

• Online and over the phone coaching
• Ad hoc meetings when possible
Expectations during the sessions

- Be open to try things out
- Share your experiences
- Build trust and a network
- Ask questions
- What happens in the BB training, stays in the BB training
Certification Project Selection Criteria

The project needs to deal with a problem that is SMART

• Specific: *One problem*
• Measurable: *If you can’t measure it, you don’t know if you improved*
• Achievable: *Contained enough to be able to make a difference*
• Relevant: *Still having a impact on the institution’s operations*
• Time constrained: *Your project needs to have an end date*
Project Selection Criteria

- The project is connected to a recognized need, impacts and adds value to your organization (quality, time, cost).
- No minimum dollar value, still SMART
- The project has a measurable benefit that can be confirmed and is correlated to a product or process performance characteristic that is measurable in a valid and reasonable way.
Project Selection Criteria

• The project is based on a process that does not depend on major influences outside of your control.
• The project has a sponsor who is willing to support the project.
Examples

- Projects lead time reduction
- Product or service lead time reduction
- Inventory turns improvement
- Bid process
- Yield improvement
- Top 1 or top 2 customer complaints reduction
- Improve change management in products or services
- Cost estimating process
Examples

• Reduction of blood stream infections in ICU
• Reduction in patient information errors
• Emergency Department Patient Wait Time
• Day surgery lead time reduction
• Redesigning a wing for efficiency and quicker communication
• Improved Patient Throughput in Radiology
• Unique treatments dosage preparation and control
Pre-Requisites

- 2 years of work experience (in any field)
- Lean Six Sigma Green Belt Certification or the equivalent
- Exceptions can be discussed, for example
  - Equivalent experience and exposure
  - Additional training pre-Black Belt
Setup Needed

- Registration and payment
- Internet connection, webcam
- Laptop with Microsoft Windows
- Material and Excel
- Templates supplied
- Minitab supplied
- Excel
Next steps

• Project
  Start identifying with your managers / directors / coach what will be your certification project

• Get Minitab license
  Needed for the 2\textsuperscript{nd} session and 3\textsuperscript{rd} sessions (Measure, Analyze, Improve, Control)

• Installing Python and related libraries
  Separate instructions will be sent
Q&A