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Sign up

Lean Six Sigma Black Belt Certification Training

ALL-IN-ONE: EXAM INCLUDED IN PRICE

5 days (35 hours)

Presentation

Lean Six Sigma Black Belt is an approach to operational excellence that combines the waste management of Lean with the statistical rigor of Six Sigma. Our training course teaches you how to manage complex DMAIC projects, analyze data using advanced tools, and drive change to achieve measurable gains in quality, cost and lead time.

At the end of the course, you'll be able to orchestrate transformations at scale, coach Green Belts and prepare for Black Belt certification. As with all our courses, this training emphasizes a resolutely practical and operational approach, based on case studies and workshops in the field.

Beyond the technical aspect, this training emphasizes the role of the Black Belt leader: the ability to federate teams, coach Green Belts, convince management and steer sustainable organizational transformations.

Objectives

- Master DMAIC methodology on strategic projects
- Use advanced statistical tools (MSA, ANOVA, DoE, SPC)
- Design and deploy high-impact Lean solutions
- Implement sustainable control plans and dashboards
- Develop transformational leadership and coach teams
- Prepare for and pass Black Belt certification

Target audience

- Quality / operational excellence managers
- Managers, project leaders, PMOs
- Continuous Improvement / Operations consultants

- Green Belts wishing to progress to Black Belt

Prerequisites

- Knowledge of Lean and Six Sigma (Green Belt level recommended)
- Experience in project management and data analysis
- Proficiency in Excel; a statistical tool (e.g. Minitab) is a plus

Training program: Lean Six Sigma Black Belt

Lean Six Sigma fundamentals and Black Belt role

- Overview of Lean and Six Sigma, complementarities
- Green Belt vs. Black Belt positioning
- Overview of DMAIC methodology
- Governance, sponsors, champions and stakeholders

Defining and framing a project

- Strategic alignment and selection of high-ROI projects
- Drafting a project charter (problem, objectives, scope)
- High-level SIPOC & scope mapping
- Team organization and RACI
- Practical workshop: drawing up a charter and a SIPOC

Voice of the customer and critical requirements (CTQ)

- Collecting the Voice of the Customer (VoC): interviews, surveys
- Translation into CTQ, CTQ tree and associated measures
- Formalizing the problem and the business case
- Project communication planning
- Practical workshop: VoC to CTQ on a real case study

Measurement: measurement plan and MSA

- Sampling strategy and collection plan
- MSA (R&R studies, bias, linearity)
- Cp/Cpk capability and baselines
- Data quality and traceability
- Practical workshop: carrying out an MSA and interpreting results

Descriptive statistics and data distribution

- Mean, median, dispersion, whisker boxes
- Normality tests and transformations
- Visualizations (histograms, run charts, boxplots)
- Common pitfalls and biases (seasonality, outliers)
- Practical workshop: statistical exploration of a dataset

Flow mapping and gemba

- Value Stream Mapping (VSM): VA/NVA time, takt time
- Gemba observation and field data collection
- Muda/Mura/Muri identification
- Definition of performance KPIs
- Practical workshop: VSM of a target process

Analysis: root causes

- Ishikawa diagram, 5 whys, cause-effect matrix
- Pareto principle and prioritization
- Correlations and simple regressions
- Business hypothesis validation
- Practical workshop: root cause investigation on real data

Hypothesis testing and ANOVA

- Choosing the right test: z/t, χ^2 , ANOVA, non-parametric
- Type I/II errors, p-value and power
- Multiple comparisons and post-hoc
- Interpreting and communicating results
- Practical workshop: series of tests on a business case

Design of experiments (DoE): foundations

- Notions of factors, levels, responses, noise
- 2^k factorial designs and interactions
- Fractional planes and resolution
- Effects analysis and pareto effects
- Practical workshop: designing a DoE and analyzing results

Improving: solutions and advanced Lean

- Creativity techniques: brainstorming, TRIZ, 6-3-5
- Lean tools: 5S, SMED, Poka-Yoke
- Cost/benefit and risk assessment
- Implementation plan and pilot
- Practical workshop: solution design and deployment plan

Managing change and value

- Change management and communication
- Impact analysis and risk management
- Value modeling and updated business case
- Scalability and scaling up
- Practical workshop: change management based on a case study

Control and sustainability

- SPC and control charts ($\bar{X}$ -R, p, u...)
- Control plans and standardization
- Documented control & periodic reviews
- Visual management, Kamishibai, quick audits
- Practical workshop: building a robust control plan

Black Belt leadership & coaching

- Leader-coach posture and influence without authority
- Coaching Green Belts and animating communities
- Decision tables and arbitration
- Data ethics and measurement culture
- Practical workshop: simulated coaching sessions

Dashboards and visual management

- Choosing relevant indicators (lag/lead)
- Obeya, rituals and steering routines
- Automating data collection and alerting
- Storytelling results and sustainability
- Practical workshop: creating an operational dashboard

Preparation for Black Belt certification

- Review of DMAIC fundamentals and key tools
- Exam tips, time management, pitfalls to avoid
- Multi-phase case study and role-playing exercises
- Personal certification action plan
- Practical workshop: mock exam and group debriefing

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced IT technology, or to acquire specific business knowledge or modern methods.

Positioning at training start

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical training: 60% hands-on, 40% theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Certification

A certificate will be awarded to each trainee who has completed the entire course.