

Mastering Lean Six Sigma: Black Belt Certification Program

3 – 14 May 2027
Barcelona (Spain)

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Ref: 321575_164205 **Date:** 3 – 14 May 2027 **Location:** Barcelona (Spain) **Fees:** 9400 GBP

Why This Course

Organizations striving for operational excellence need leaders who can move beyond basic improvement tools and drive transformation at scale. A Lean Six Sigma Black Belt is not only a technical expert in data and process analysis, but also a strategic change agent capable of delivering measurable financial impact.

This intensive 10-day Lean Six Sigma Black Belt program is designed for experienced professionals ready to lead complex, cross-functional initiatives. The course combines advanced statistical analysis, structured problem-solving, and leadership strategies to ensure participants can manage high-impact projects and embed a culture of continuous improvement across the organization.

What You'll Learn and Practice

By attending this course, you will:

- Apply advanced statistical tools to analyze complex process challenges.
- Lead large-scale improvement initiatives across multiple departments.
- Strengthen strategic thinking and data-driven decision-making.
- Mentor and coach Green Belts and project teams effectively.
- Align Lean Six Sigma projects with organizational priorities and long-term strategy.

The Program Flow

Day 1: Advanced Lean Six Sigma Concepts

- Advanced application of the DMAIC framework
- Strategic project selection and scoping
- Linking improvement initiatives to business objectives
- Leadership principles and structured change management

Day 2: Advanced Statistical Analysis

- Hypothesis testing and confidence intervals
- Analysis of Variance ANOVA
- Multiple regression analysis
- Non-parametric statistical methods

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Day 3: Design of Experiments DOE

- Full and fractional factorial designs
- Response surface methodology
- Taguchi methods for robust design
- Practical experimentation strategies

Day 4: Advanced Process Capability and Control

- Multivariate process capability analysis
- Statistical Process Control SPC for short runs
- Advanced control chart interpretation
- Capability analysis for non-normal data

Day 5: Lean Methods and Tools

- Advanced Value Stream Mapping VSM
- Theory of Constraints TOC applications
- Pull systems and Kanban in complex environments
- Lean principles beyond manufacturing

Day 6: Advanced Root Cause Analysis

- Fault Tree Analysis
- Failure Mode and Effects Analysis FMEA
- Shainin Red X methodology
- Structured, high-level problem-solving frameworks

Day 7: Financial Analysis and Project Management

- Cost-benefit analysis and financial justification
- Risk assessment and mitigation planning
- Advanced project management tools
- Stakeholder communication and executive reporting

Day 8: Data Mining and Predictive Analytics

- Foundations of data mining
- Predictive modeling techniques
- Introduction to machine learning applications in process improvement
- Leveraging big data for operational excellence

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Day 9: Design for Six Sigma DFSS

- DMADV methodology
- Quality Function Deployment QFD
- Robust design principles
- Designing for reliability and maintainability

Day 10: Leadership and Deployment Strategies

- Building and sustaining a Lean Six Sigma culture
- Coaching and mentoring Green Belts
- Enterprise-wide deployment strategies
- Sustaining improvements and continuous learning systems

Individual Impact

Participants will gain:

- Confidence to lead complex, high-value improvement initiatives.
- Advanced analytical skills for data-driven decisions.
- Expertise in mentoring project teams and developing internal talent.
- Stronger leadership capabilities in operational excellence environments.

Organizational Impact

Organizations will benefit from:

- High-impact projects delivering measurable financial returns.
- Improved cross-functional collaboration and alignment.
- Stronger internal capability in advanced analytics and process optimization.
- Sustainable improvement systems embedded within the organization.

Training Methodology

- Instructor-led sessions with advanced statistical applications.
- Hands-on data analysis and experimentation exercises.
- Real-world case studies and project simulations.
- Leadership workshops and strategic deployment discussions.

Beyond the Course

By the end of the program, participants will be prepared to:

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- Lead enterprise-level Lean Six Sigma initiatives.
- Deliver sustainable operational improvements backed by data.
- Develop and mentor future improvement leaders.
- Drive a culture of excellence and continuous transformation across the organization.

A graphic of a chessboard with several chess pieces (a king, a queen, and a pawn) positioned on it. The board is checkered in black and white, and the pieces are gold and silver. In the background, there are concentric circles radiating from the center of the board.

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