

Mastering Lean Six Sigma: Black Belt Certification Program

Audit & Quality Assurance
Barcelona (Spain)
15 - 26 Sep 2025

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Mastering Lean Six Sigma: Black Belt Certification Program

Ref: 321575_134204 **Date:** 15 - 26 Sep 2025 **Location:** Barcelona (Spain) **Fees:** 7400 **Euro**

Course Description

This intensive 10-day Lean Six Sigma Black Belt course equips participants with advanced skills in process improvement, statistical analysis, and project management. Designed for experienced professionals, the program covers complex problem-solving techniques, advanced statistical tools, and leadership strategies essential for driving organizational excellence and leading high-impact projects.

Learning Objectives

- Master advanced statistical tools and techniques for complex process analysis
- Develop expertise in leading large-scale improvement projects across multiple functions
- Enhance strategic thinking and decision-making skills for process optimization
- Gain proficiency in mentoring and coaching Green Belts and project teams
- Learn to align Lean Six Sigma initiatives with organizational goals and strategies

Course Modules

Day 1: Advanced Lean Six Sigma Concepts

- Review of Lean Six Sigma fundamentals
- Advanced DMAIC methodology
- Strategic project selection and scoping
- Change management and leadership principles

Day 2: Advanced Statistical Analysis

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

Day 3: Design of Experiments DOE

- Full factorial designs
- Fractional factorial designs
- Response surface methodology
- Taguchi methods

A graphic of a chessboard with several chess pieces (king, queen, rook, knight, and pawns) in gold and silver. The pieces are arranged on a checkered board with concentric circles in the background.

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Day 4: Advanced Process Capability and Control

- Multivariate process capability analysis
- Short run SPC techniques
- Advanced control charts
- Process capability for non-normal data

Day 5: Lean Methods and Tools

- Value Stream Mapping VSM for complex processes
- Theory of Constraints TOC
- Advanced pull systems and Kanban
- Lean for non-manufacturing environments

Day 6: Advanced Root Cause Analysis

- Fault Tree Analysis
- Failure Mode and Effects Analysis FMEA
- Shainin Red X methodology
- Advanced problem-solving techniques

Day 7: Financial Analysis and Project Management

- Cost-benefit analysis for complex projects
- Risk assessment and mitigation strategies
- Advanced project management techniques
- Stakeholder management and communication

Day 8: Data Mining and Predictive Analytics

- Introduction to data mining techniques
- Predictive modeling
- Machine learning applications in Six Sigma
- Big data analytics for process improvement

Day 9: Design for Six Sigma DFSS

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

Day 10: Leadership and Deployment Strategies

- Developing a Lean Six Sigma culture
- Coaching and mentoring techniques
- Organizational deployment strategies

A graphic of a chessboard with several chess pieces. A large gold king piece is in the foreground, with a silver pawn and a gold pawn behind it. The text 'UK Training' is above 'PARTNER' in a bold, black, sans-serif font.

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- Sustaining improvements and continuous learning

Practical Wins for Participants

- Ability to lead complex, cross-functional improvement projects with significant financial impact
- Enhanced skills in advanced data analysis and strategic decision-making
- Expertise in mentoring and developing Green Belts and project teams
- Capability to align process improvement initiatives with organizational strategy and goals

A graphic illustration of a chessboard with several chess pieces. A large gold king piece is prominent in the foreground, with a silver pawn and a silver knight nearby. In the background, there are concentric circles emanating from a point, suggesting a strategic or analytical theme.

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