



## Lean Six Sigma Black Belt

**Duration: 10 Days**    **Course Code: LSSBLB**    **Delivery Method: Company Event**

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### Overview:

The Lean Six Sigma Black Belt training and certification program will equip participants with the technical competencies, team leadership skills and change management skills to lead Lean Six Sigma projects using the Lean Principles and DMAIC (Define Measure Analyze Improve Control) methodology. The 10-day program will cover the most contemporary process improvement practices adopted by leading organizations and proponents of Lean Sigma Transformation in manufacturing, service, healthcare, financial, public sector as well as many other industries.

Business success in any organisation requires vision, products and services that add value, processes that are efficient, people who are competent and a culture that supports the behaviours of improvement and development. This course will address all these aspects with a significant focus on the cultural change and the role of the Lean Sigma Black Belt in the facilitation, change management and application of the tools to change a culture.

The role of the Lean Six Sigma Black Belt is a business improvement professional that is able to support the Lean and Six Sigma implementation journey in organizations, including assisting systems and tools implementation. They possess the ability to mentor multiple teams, monitor performance of all activities and engage leadership support to deliver genuine business improvements.

This programme will run over 5 months and will focus heavily on the application of the tools rather than their academic understanding.

The course covers the phases of a typical Lean Transformation utilising Lean Principles and Six Sigma: Define, Measure, Analyze, Improve and Control.

The methodology follows a structured sequence of problem solving techniques and cultural change management to arrive at a solution. Statistics aid in the decision-making process and help to validate the success of changes. Cultural facilitation embeds that change.

### Company Events

These events can be delivered exclusively for your company at our locations or yours, specifically for your delegates and your needs. The Company Events can be tailored or standard course deliveries.

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### Target Audience:

This Lean Six Sigma Black Belt Training Course is recommended for all those in an organisation who will lead medium or large improvements and who will act as coaches or mentors to others involved in the improvement programme.

It is suitable for managers, internal consultants, change agents, project managers, team leaders, business improvement leaders or facilitators.

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### Prerequisites:

It is a pre-requisite that participants possess a Lean Six Sigma Green Belt or equivalent and have identified a significant improvement project that they will implement over the duration of the course.

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## Content:

- Lean Transformation Roadmap
- Lean Assessment
- Leadership Responsibilities, roadblocks, change management, projects, Six Sigma roles and responsibilities
- Organizational Process Management and Measures
- Impact on stakeholders, Critical to x (CTx) requirements, Benchmarking, Business performance measures, Financial measures
- Project Selection
- NPV (Net Present Value) Analysis
- Value Stream Mapping
- Management of change
- Lean Six Sigma Teams
- Hoshin Kanri strategy deployment

### Define Phase

- Voice of the customer
- Project charter
- Problem statement
- Project scope
- Goals and objectives
- Project performance measures
- Project tracking
- Project Stakeholder Analysis
- Measurable Customer Requirements
- Requirements Statements
- Process Mapping
- SIPOC

### Measure Phase

- Process characteristics
- Input and output variables
- Process flow metrics
- Process analysis tools
- Data collection
- Types of data
- Measurement scales
- Sampling methods
- Collecting data
- Measurement systems
- Measurement methods
- Measurement systems analysis
- Basic statistics
- Basic terms
- Central limit theorem
- Descriptive statistics
- Graphical methods
- Valid statistical conclusions
- Probability
- Basic concepts and Distributions
- Process capability
- Process capability indices
- Process performance indices
- Short-term and long-term capability
- Process capability for non-normal data
- Process capability for attributes data

Process capability studies and Process performance vs. specification

### Analyse Phase

- Data Analysis Overview
- Pareto Analysis
- Gap analysis
- Root cause analysis
- Waste analysis
- Run Charts
- Histogram/Frequency Plot
- Cause and Effect Analysis
- Scatter Plot or Correlation Diagram
- Multi-Variant Analysis
- Correlation coefficient
- Regression
- Multivariate tools
- Multi-vari studies
- Attributes data analysis
- Inferential Statistics Primer
- Hypothesis testing
- Terminology
- Statistical vs. practical
- Significance
- Sample size
- Design of Experiments Overview
- Failure mode and effects analysis (FMEA)

### Improve Phase

- Generating Creative Solutions-Brainstorming
- Analysing and Selecting Solutions-Decision Matrix
- 5S
- Autonomous Maintenance / TPM
- Quick Changeover / SMED
- Line Balancing/Operator Balance Charts
- Continuous Flow Layouts
- 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
- Kaizen and Kaizen Blitz
- Theory of constraints (TOC)
- TRIZ
- Risk analysis and mitigation

### Control Phase

- Control Plan Elements
- Statistical Process Control
- Statistical process control
- Objectives,
- Selection of variables
- Rational sub-grouping
- Control chart selection
- Control chart analysis
- Other control tools
- Total productive maintenance
- Visual factory
- Maintain controls
- Measurement system re-analysis
- Control plan
- Sustain improvements
- Lessons learned
- Training plan deployment
- Documentation

### Design for Six Sigma (DFSS) Frameworks and Methodologies

- Common DFSS methodologies
- Customer Expectations
- House of Quality
- Critical to Quality Deployment
- Critical Parameter Management
- Design for X (DFX)
- Robust design and process (Special design tools)

## Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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