The Lean Six Sigma Black Belt Program

Focus on: The Manager ☑ The Specialist ☑ Spotlight Programme ☐ Hands-on Skills ☐

Course Overview

In Lean Six Sigma organisations, it is the Black Belts who lead the organisation's improvement processes and provide support to both the "operational" Green Belts and Senior Management on Lean Six Sigma and Business Improvement issues.

With their higher levels of knowledge and skills Black Belts can tackle issues that have stubbornly resisted resolution by Green Belts, mentor and support Green Belt teams and take the strategic perspective required to align improvement efforts to strategic priorities. This program provides participants with the level of knowledge and skill required to achieve accreditation at the Black Belt level.

Made famous by organisations such as Motorola, General Electric and Honeywell, Six Sigma seeks to improve the quality of process outputs by identifying and removing the causes of errors and variation. While Lean, the embodiment of Toyota's Production System principles, focuses on waste reduction and maximisation of value.

Combining the two approaches provides a powerful methodology for embedding improvement and excellence into an organisation's core values – a disciplined process focused on delivering near-perfect products and services.

This Lean Six Sigma Black Belt program is designed to equip organisations with a team of improvement experts who can provide leadership and support for improvement initiatives within the organisation, communicate effectively with senior management and support Green Belts to improve Green Belt team effectiveness.

Note: Participants must have completed a Green Belt program and qualified for certification at the Green Belt level to be eligible for this program.

Course Objectives		This Course is Ideal For:	
1	Quality Function Deployment methodology for customer focus and innovation;	✓	Senior Managers/Executive responsible for leading improvement and culture change initiatives within the organisation, and who will have responsibility for other Black Belts and building an improvement culture;
2	Measurement Systems Analysis techniques, Analysis of Variance (ANOVA), Chi-squared test for independence;		
3	Regression Analysis methodologies, including linear, multiple and logistic regression;	✓	Middle Managers, Front Line Managers and Team Leaders who wish to dedicate some or all of their career to operational excellence and improvement as an area of focus. (Typically, some of these may already be Green Belts);
4	Design for Six Sigma Methodology and Techniques;		
5	Design of Experiment methodologies, including "the cube", orthogonal arrays and Taguchi methods.	✓	Operational level employees who are interested in improvement and in being involved in the process of improvement, who

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6	Awareness of management processes, management consulting and change management techniques.		have already operated as Green Belts and have stood out as high achievers.

Course Content

Day	Theme	Coverage
1	Introduction	• **Introduction** to the Lean Six Sigma Black Belt program • The Black Belt Role • **Define Phase - Advanced Techniques** • Understanding to Voice of the Customer • Quality Function Deployment/House of Quality • Using QFD to Scope Customer Requirements • Using QFD to Scope Process Requirements
2	Advanced Measure and Analysis Phase Techniques	• The F-test revisited • Analysis of Variance (ANOVA) • Measurement System Analysis • Gauge R&R • Regression Analysis • Introduction to Regression Analysis • Linear Regression Analysis
3	Regression Analysis (continued)	• Multiple Regression Analysis • Non –Linear Regressions Models • Regression Analysis Application Case Study • Logistic Regression • Time Series Multiple Regression Models • **Design for Six Sigma** • Introduction to Design for Six Sigma • Core Process Design Concepts • Process Design • Organisation Design • Technological Design • Innovation and Creativity Frameworks • Inventive Principles • Introduction to TRIZ
4	Design of Experiments	• Introduction to Design of Experiments • Controlling for other factors • Randomisation and Blocking • 2 Factor Full Factorial Designs • Assessing Main Effects and Interactions

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		• 3 Factor Full Factorial Designs • Assessing Main Effects and Interactions • Multiple factor designs • Full factorials designs • Fractional Factorial Designs/ Orthogonal Arrays • DOE Simulation • Interpretation of results of designed experiments • Design optimisation • **Taguchi Methods** • The Taguchi Loss Function • Noise and Robustness • Signal-to-Noise Ratio • Taguchi Fractional Factorial Designs • Taguchi DOE Application Case Study
5	The Management Process	• The Management Process • Identifying Opportunities through Organisation Review • Team Level Implementation Issues • Change Management • Organisational implementation and culture change issues

Course Assessment

Participants will be assessed on:

- Participation in sessions
- Completion of exercises & case studies
- Performance in assessments

Certification

Upon successful completion of the course, participants will receive a **Certificate of Successful Completion**, along with a **Transcript of Marks** showing the performance by grade in each element of assessment and overall.

Course Instructor

This speaker is a Management Educator and Consultant with extensive experience teaching MBA, Executive Education and Management Development Seminars and as a hands-on practitioner.

He has worked all over with world from Australia to the US, the Middle East, the UK, Western Europe and Asia, and always with a focus on achieving Business and Operational Excellence.

He is internationally recognised as a specialist in Operations Management and Business Performance Improvement, along with Statistical and Quantitative Methods, Project Management, Quality Management, Managing Innovation and e-Business.