Excelligence

Lean Six Sigma Management Level 3

A Lean Six Sigma Green Belt Course

An indispensable prerequisite for driving evidenced-based change management and excellence in strategic decisions

CARIBBEAN CENTER FOR ORGANIZATIONAL Excellence

Driving Improvement & Efficiency

Bridging the Way to Excellence & Resilience

To optimize its performance an organization must first understand its processes and thereafter create sustained continuous improvements

CARIBBEAN CENTER FOR ORGANIZATIONAL Excellence

As the world of business evolves, the positioning of organizations irrespective of size or sector to appropriately manage growth within well-defined parameters that minimize cost and optimize revenue has never been more important. Actually, the volatility of markets and economies across the globe is increasingly demanding higher levels of refine management and agile leadership, without which, the prospects of survival into the long term can be significantly compromised.

Organizations positioning themselves to better understand and appreciate that financial outcomes are the end result of the management of a myriad of process and performance measures, outperform others and improve their prospects to efficiently manage change and grow, even in volatile situations.

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Your Lean Six Sigma Management Level 3

Green Belt

Course Overview

Your Lean Six Sigma Green Belt Certification includes

1

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- **Introduction to Lean:** The history and five principles of Lean, defining value, the eight wastes, "Flow" and Value Streams and Kaizen rapid improvement.
- **Introduction to Six Sigma:** The history of Six Sigma, the DMAIC approach, process variation and Y = f(x), DPMO, the "Hidden Factory" and the Critical to (CT) Tree.
- **Writing Effective Problem Statements:** The 5W2H method for writing effective problem statements, use the “Five Why" and defining improvement goals.
- **Introduction to Kaizen:** Introduction to Kaizen rapid improvement and how to plan an execute successful Kaizen events.
- **Using the A3 Report for Rapid Improvement:** How to use the A3 Report for rapid improvement projects.

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2

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- **SIPOC Mapping:** Construct SIPOC diagrams to provide a high-level view of a process, incorporating key information about suppliers, process inputs, the process itself, and the key outputs required by customers.
- **Understanding and Implementing 5S/6S:** Establishing 5S/6S workplace environments.
- **Implementing and Facilitating Lean "Huddles":** Learn how to implement and facilitate daily Lean "Huddles".
- **Visual Workplace:** Learn how to leverage visual workplace principles, methods and techniques to enable a work environment to become self-ordering, self-explaining, self-regulating and self-improving..
- **Standard Work:** Understand the principles and methods behind standard work including key components that make up standard work, including takt time and task sequencing.

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3

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- **Mapping the Process :** Learn how to map a process using process flow mapping tools and techniques..
- **Spaghetti Diagrams:** Learn how to construct spaghetti diagrams to identify opportunities for improvement in work cell/workplace design and layout.
- **Gemba (Waste) Walks:** Learn how to plan and conduct "Gemba Walks" to better understand the customer experience, identify improvement opportunity and engage the front line team.
- **Failure Modes and Effects Analysis (FMEA):** Identify and assess process risk using the FMEA and leveraging this analysis for continuous improvement.
- **Error-Proofing/Mistake-proofing:** Learn how to apply error-proofing, (Poka Yoke), to improve processes and reduce risk.

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4

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- **Controlling the Process:** Introduction to statistical process control (SPC) and using "voice of the process" and control plans to manage and improve your processes.
- **Assessing Process Capability:** Capturing and assessing the voice of the customer. Understanding process tolerance versus specifications. Determining process capability.
- **Constructing Project Charters:** Establishing "winning conditions" for your projects using project charters.
- **Managing Change:** Understand how to assess resistance and conduct change readiness assessments and stakeholder analysis to better manage change.
- **Brainstorming, Affinity Diagrams & Team Voting:** Learn how to facilitate effective brainstorming sessions, group by affinity, and use voting techniques to help prioritize and achieve consensus.

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- **Cause & Effect Diagrams & the Five Whys:** Construct cause and effect diagrams. Aka "Ishikawa", "Fishbone". Use of the "Five Whys".
- **Pareto Charts and the 80/20 Rule:** Constructing Pareto charts to focus on the "vital few".
- **Value Stream Mapping:** Learn how to construct value stream maps - an essential Lean tool.
- **Kanban and Material Management:** Eliminating waste and constraints to process flow with improved material management techniques including Kan Ban and point of use systems. JIT,Touch once, batch reduction and single piece flow.
- **Work Levelling/Load Balancing:** Construct a load levelling chart and apply techniques to balance work and reduce bottlenecks.

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- **Work Cell Design & Improved Office/Facility Layout:** Improve work cell layout and design to improve flow.
- **Rapid Changeover Techniques/SMED:** Learn techniques for establishing and facilitating Rapid/Quick changeover.
- **Process Control Plans and Control Charts:** Statistical process control (SPC) and implementing process control plans and selecting and constructing control charts and run charts to capture the voice of the process.
- **Introduction to Basic Statistics:** Populations and samples, parameters and statistics, types of data, descriptive and inferential statistics. Central tendency and dispersion, proportions and frequencies.
- **The Normal Distribution:** Understanding the normal distribution and its properties.

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7

- **The Standard Normal (Z) Distribution:** Understanding the standard normal (Z) distribution.
- **Testing for Normality:** Conduct and interpret the results of a normality test.
- **Graphical Analysis - The Histogram:** Introduction to the histogram - features and interpreting results.
- **Graphical Analysis - The Boxplot:** Introduction to boxplots - features and interpreting results..
- **Graphical Analysis - The Scatter Plot:** Introduction to scatter and matrix plots - features and interpreting results.

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- **Central Limit Theorem and Confidence Intervals:** The Central Limit Theorem. Introduction to confidence intervals and standard error of the mean.
- **Introduction to Hypothesis Testing:** What is a hypothesis test? The null and alternate hypotheses and establishing Alpha (Type I) and Beta (Type II) risk. How to conduct a hypothesis test.
- **Data Collection and Sampling:** Data collection techniques and sampling methods. Determining sample sizes to satisfy Alpha and Beta risk.
- **MSA - Gauge R & R Studies:** Gauge repeatability and reproducibility studies. Assessing for Linearity and Bias. Gauge run charts.
- **MSA - Attribute Agreement Analysis:** Using attribute agreement analysis to assess the quality of your measurement system.

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- **Process Capability Measures - Discrete:** Discrete capability studies using Yield, Throughput Yield, Rolled Throughput Yield, DPMO, and Z score/Z Bench,
- **Process Capability Measures - Continuous:** Continuous capability studies and interpreting Cp, Cpk, Cpm, Pp, Ppk, PPM, etc.
- **Correlation and Simple Linear Regression:** Correlation studies and simple linear regression. Interpreting p-values, R-Squared, R-Squared (adj). Correlation versus causation.
- **Discrete & Continuous Probability Distributions:** Introduction to probability distributions including Binomial, Poisson, t-Distribution, F-Distribution, Chi-Square. The concept of the degrees of freedom.
- **Hypothesis Testing - Mean and Median:** Use of the Z-test, (Student) t-Test, Paired sample test, Sign, Wilcoxon, Mann-Whitney, Kruskal-Wallis and Mood's Median tests.

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- **Test for Equal Variance:** Homogeneity of Variance. F-Test, Bartlett and Levene's test to test for equal variance.
- **Analysis of Variance (ANOVA) and ANOM:** Analysis of Variance (1 and 2 way) and Analysis of Means (ANOM).
- **Proportion Testing :** Testing for changes in count or frequency using proportion testing (1 and 2 sample).
- **Chi-Square Analysis:** Testing for changes in count or frequency Chi-Square analysis (Goodness of Fit and Test of Independence).
- **Voice of the Customer - Kano Analysis:** Techniques to capture and quantify voice of the customer (VOC) including Kano Analysis, Net Promoter Score (NPS), and use of Pairwise Comparison and Conjoint Analysis.

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11

- Voice of the Customer - Net Promoter Score: Techniques to quantify voice of the customer (VOC) using Net Promoter Score (NPS).

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For more information

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