



Société de conseil, de services et de formation.



What is **LEAN SIX SIGMA**?



LeanSix Sigma



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What is Lean Six Sigma?

Lean Six Sigma is a combination of both Lean and Six Sigma. If your business problem deals with problems related to waste and process flow you are likely to use more Lean. If your business problem relates to defects and process variation (i.e. not consistently meeting your customer requirements) then you are likely to use more Six Sigma.

Lean Six Sigma follows the Define, Measure, Analyze, Improve and Control (DMAIC) process. Throughout the project you are constantly examining and re-examining whether you should be using more Lean or more Six Sigma. In the Improvement Phase of the project you will be looking at Lean concepts to correct your problem.





ABOUT US

3i Solution Consulting provides consulting and training in Lean Six Sigma methodology and improvement process. We have designed our Lean Six Sigma training programs based on globally respected Lean Six Sigma Body of Knowledge (BOK). Our experience and knowledge has helped us to create a unique and unsurpassed training program to provide you with what is required to be successful.

Our experts in Lean Six Sigma methodology will help your business to respond your customers' needs and drive revenue growth through process improvement and waste reduction.



What we do?

We lead the know-how in development training and certification courses in Lean Six Sigma, providing effective coaching services for individuals and corporations. Through this commitment, 3 I Solution Consulting has the most competitive business performance improvement training courses in the industry to offer the complete Lean Six Sigma Belts curriculum.

We highly understand how to approach Lean Six Sigma by offering a wide range of flexible and modular programs that fit your specific needs with our excellent team of consultants and trainers to custom the best solution for your business and reducing costs.

What to Expect in the Training?

Challenge - Organizational improvement requires not only the hard skills taught within our programs but it also requires leadership. During our courses we will be pushing you to work hard to master both the hard and soft skills required to generate outstanding performance improvement.

Practical examples - Case studies are presented showing you how to use the tools in a real scenario. You will learn theory, practice and mastery. During our courses you will be applying the Lean Six Sigma concepts we teach you to projects within your own organization.

Best Practices - You are presented best practices we have learned saving you from making unnecessary mistakes. While most courses simply teach you theory, we teach you how to be successful.

Team Projects - We are interested in pushing our students towards excellence. During this course you will be required to complete team projects.

Case Study Review - is designed to help you master concepts learned within your training. The remainder of your grade will come from our examination.

Quizzes - throughout this course; you will be required to take quizzes to assess your knowledge and area of improvement

Final Test for Certification - At the end students need to complete a final exam, 80% score is required to pass.

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YELLOW BELT

The Lean Six Sigma Yellow Belt program will be intended at those new to the world of Lean Six Sigma, interest, or need to develop foundational knowledge. Yellow belts can be the entry level to employees who seek to improve their world or executive champions who require an overview of Lean Six Sigma.

This specific program provides you with comprehension of the fundamental methodologies utilized for Six Sigma. Getting basic improvement procedures and necessary metrics. In the case of many organizations, the person who has Yellow Belt certified training is a “subject matter expert”, who can become a central team member on an individual project or multiple projects.



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YELLOW BELT

Designed to teach Lean Six Sigma Fundamentals and its application as part time improvement team projects leaders.

CONTENT

LSS INTRODUCTION

- Lean Six Sigma Overview
- Value-added and non-value-added activities
- Lean Six Sigma Framework
- Lean and DMAIC
- Six Sigma Roles (Yellow Belt)

DEFINE

- Define
- Project Charter
- Project Management
- The Voice Of The Customer (VOC)
- Affinity Diagram
- CTQC Tree Diagram
- Process Definition
- Process Mapping
- SIPOC Analysis
- Flow Charts
- Value Stream Mapping
- Flow Charts
- Value-Added Flow Charts
- Spaghetti Charts Measure

IMPROVE

- Brainstorming
- Risk Planning FMEA
- Quick Changeover; Pull Scheduling
- The A3 One-Page Control

LEAN

- Calculating the Sigma Level
- Trend Chart Histogram
- Pareto Chart
- Quantifying Process Variability
- Data Collection
- SPC - Introduction and Background
- X and Moving Range Charts – Tool set Analyze

MEASURE

- Measurement & Metrics
- Baseline Performance Minitab Basics

ANALYZE

- Brainstorming
- Risk Planning FMEA
- Quick Changeover; Pull Scheduling
- The A3 One-Page Control

CONTROL

- 5-S Approach
- Process Control
- Visual Control
- Control Charts
- Control Plan
- TPM Objectives & Benefits
- Standardized Work & Project Documentation

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GREEN BELT

A Green Belt is an expert in implementing Lean and Six Sigma tools known to support Black Belts in implementing improvement projects using the tools of Lean and Six Sigma. It also generates and identifies opportunities for improvement in the organization. It has the ability to train or Yellow Belts Yellow Belts.

This program is designed to professionals to become involved in Lean Six Sigma initiative of their company or are already involved in to improve processes.





Lean Six Sigma

GREEN BELT

DESIGNED TO PROFESSIONALS INTERESTED IN BECOMING INVOLVED IN SIX SIGMA INITIATIVE OF THEIR COMPANY OR ARE ALREADY INVOLVED IN ACTIVITIES TO IMPROVE PROCESSES.

CONTENT

DEFINE

- Lean Principal
- Process Management for Projects
- Lean Tools
- Lean Implementation
- Project Identification
- Project Management Basics
- Management and Planning Tools
- Business Results for Projects
- Team Dynamics and Performance
- Stakeholder Management/Analysis
- Design for Six Sigma (DFSS)
- Voice of Customer (VOC)
- Critical to Quality (CTQ's)
- CTQC Tree Diagram
 - Process Definition
 - Process Mapping - Overview
 - Process Mapping (SIPOC)
- Flow Charts
- Takt Time
- Value Stream Mapping
- Define Tollgate

MEASURE

- Process Analysis and Documentation
 - Process modeling
- Probability and Statistics
 - Drawing valid statistical conclusions
 - Central limit theorem and sampling distribution of the mean
 - Basic probability concepts
- Collecting and Summarizing Data
 - Data collection method
 - Techniques for assuring data accuracy and integrity
 - Probability Distribution
 - Discrete probability distributions
 - Measurement System Analysis
 - Calculate, analyze, and interpret measurement system capability using repeatability and reproducibility (GR&R)
 - Measurement correlation, bias, linearity, percent agreement, and precision/tolerance (P/T)
 - Process Capability and Performance
 - Process Stability Studies
 - Process Normality Studies
 - Process performance Indices
 - Process capability for attributes data
- Measure Tollgate

ANALYZE

- Root Cause Analysis
- 5-Why, 1-How
- Boxplots
- Scatter plots
- Pareto Chart
- Cause & Effect Diagram
- Exploratory Data Analysis
 - Causes for Variations
 - Multi-vari studies
 - Sampling Plans
 - Regression
 - Correlation Coefficient
 - Linear Correlation & Regression
 - Difference between Correlation and Causation
- Hypothesis Testing
 - Hypothesis
 - Type I and Type II Errors
 - One/Two-Sample Z-Test
 - One/Two-Sample T-Test
 - F-Test Statistic
 - One/Two-Sample Test of Proportions
 - Paired-Comparison Tests
 - Analysis of Variance (ANOVA)
 - Chi square
- Analyze Tollgate



IMPROVE

- Document/Design Solution
- Design of Experiments
- Prioritization of Solutions
- Brainstorming
- Narrowing Down the List of Ideas
- Corrective Action Matrix
- Financial Impact of Solutions
- Cost/Benefit Analysis
- Risk management
- Failure Mode Effect Analysis (FMEA)
- Mistake Proofing
- Line Balancing
- Quick Changeover
- Pull System
- Cellular Processing
- Piloting Solutions
- Improve Tollgate

CONTROL

- Visual Control
- Statistical Process Control (SPC)
 - Objectives and benefits
 - Rational sub grouping
 - Selection and application of control charts
 - Analysis of control charts
- Control Charts
 - X-bar & R, X-MR
 - p/np/c/u Charts
 - Analyzing Control Chart
- Process Management Introduction
- Process Monitoring
- Dashboards
- Process Reviews
- The Process Control Plan
- Action Planning
- Control Tollgate
- Implement and Validate Solution

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BLACK BELT



The black belt program is designed to participants who wants to learn about Lean and Six Sigma tools and analysis approaches, such as Analysis Measurement System (MSA), Design of Experiments (DOE) and failure mode and effects analysis (FMEA). Essentially, learn how to apply the elimination of waste and variation reduction methods practically.





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BLACK BELT

The Black Belt is responsible for leading and implementing Lean Six Sigma projects. Black belts support and mentor green and yellow belts, as well, can train and certify these lower level belts.

DEFINE

- Project Selection
- Project Initiation
- Project Planning
- Project Charter
- Change Management Success Factors For Effective Change Management
- Meeting Management
- Stakeholder Management/Analysis
- RACI Matrix
- Communication Planning
- Voice of Customer (VOC)
- Critical to Quality (CTQ's)
- Affinity Diagram
- CTQC Tree Diagram
- Quality Function Deployment (QFD)
- Process Definition
- Process Mapping - Overview
- Process Mapping (SIPOC)
- Flow Charts
- Takt Time
- Value Stream Mapping
- Define Tollgate - Progress Review

MEASURE

- Measurements and Basics Statistics
- Discrete vs. Continuous Measurements
- Basic Quality Tools
- Histogram
- Normal probability plot
- Time Series plot
- Descriptive statistics
- Measurement System Analysis (MSA)
- Gage R&R Study (Crossed)
- Gage R&R Study (Nested)
- Attribute Gage Study
- Attribute Agreement Analysis
- Baseline Performance
- Performance Metrics – Throughput Yield
- Performance Metrics - Rolled Throughput Yield
- Understanding Variation
- Calculating the Sigma Level
- Types of Variation
- Variation Trees
- Charting Process
- Introduction to Statistical Process Control (SPC)
- SPC Chart Selection
- Control Chart Limits
- Control Charts
- Attribute Control Chart
- X and Moving Range Charts
- X-bar and R Chart
- Process Capability
- Individual Distribution Identification
- Box-Cox Transformation
- Johnson Transformation
- Measure Tollgate - Progress Review
- Analyze Phase
- Root Cause Analysis
- 5-Why, 1-How
- Boxplots
- Scatter plots

ANALYZE

- Pareto Chart
- Cause & Effect Diagram
- Correlation and Regression Analysis
- Binary Logistic Regression
- Multiple Regression
- Central Limit Theorem
- Hypothesis Tests
- Types of Error
- Power Analysis
- Confidence Interval
- Comparing One Mean to a Standard using 1-sample t-test
- Comparing Two Means using a 2-sample t-test
- Comparing paired observations using a paired t-test
- Comparing One Proportion to a Standard
- Comparing Two Proportions
- Chi-Square Test
- One-Way Analysis of Variance (ANOVA)
- Parametric vs. Non Parametric Tests
- Design of Experiments Overview
- Selecting the Right Design
- Introduction to Factorial Designs
- Main Effects and Interactions
- Factorial Plots
- Model Assumptions
- Optimal Factor Settings
- Full Factorial Designs
- Fractional Factorial Designs
- General Factorial Designs
- DOE Power and Sample Size
- Multiple Response Optimization
- DOE with Qualitative Responses
- Analyze Tollgate progress review

IMPROVE

- Document/Design Solution
- Prioritization of Solutions
- Brainstorming
- Narrowing Down The List of Ideas
- Corrective Action Matrix
- Financial Impact of Solutions
- Cost/Benefit Analysis
- Risk management
- Failure Mode Effect Analysis (FMEA)
- Mistake Proofing
- Line Balancing
- The A3 One-Page Report
- Quick Changeover
- Pull System
- Cellular Processing
- Kaizen
- Piloting Solutions
- Improve Tollgate Progress Review

CONTROL

- Visual Control
- Process Control
- Control Charts
- Process Management Introduction
- Process Monitoring
- Dashboards
- Response Planning
- Process Reviews
- The Process Control Plan
- 5-S Approach
- Action Planning
- Communication of Project Outcomes
- Control Tollgate Progress Review
- Solution Replication and Closure

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