PROFESSIONAL DEVELOPMENT TRAINING

# Lean Six Sigma Green Belt Training - Signature Series

1300 121 400

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5.0 DAY COURSE

**The Lean Six Sigma Green Belt training program is a highly practical course designed to help you develop the skills and confidence to lead Continuous Improvement projects that deliver measurable, commercially focused outcomes.**

**Throughout this five-day workshop, you will explore key Lean and Six Sigma principles and apply them directly to real-world workplace examples. The focus is on developing practical capability – not just theory – so you can immediately identify and implement improvements in your own organisation.**

**The course includes 40 hours of structured learning, complemented by approximately 18 hours of self-directed study to reinforce understanding and application of key concepts, bringing the total learning time to around 58 hours.**

**You'll be guided by Australia's leading Lean Six Sigma trainers, gaining the tools, templates, and knowledge to successfully drive process improvement and operational excellence within your workplace.**

**Attend a course today throughout Australia including: Brisbane, Sydney, Melbourne, Canberra, Adelaide and Perth.**

## What You'll Gain:

The Lean Six Sigma Green Belt Certification is a highly respected credential - it means you have demonstrated a level of mastery of specific methodologies and techniques required to help drive Continuous Improvement projects that have measurable, commercially focused outcomes.

This training course will provide you with the theory and then the opportunity to practice the techniques to help you reach the standard of Lean Six Sigma - Green Belt.

The course duration is five days. In addition to the scheduled course time (40 hours) you will need to set aside 18 hours for self-directed learning to ensure you stay up to date with absorbing and understanding the concepts discussed in the course. Total course duration is up to 58 hours.

You will be supported by Australia's leading trainers and become part of a global network of Six Sigma and Continuous Improvement specialists through PD Training and the IASSC.

**Note:** PD Training provides the Lean Six Sigma Green Belt training and exam preparation. Certification is awarded separately by the International Association of Six Sigma Certification (IASSC) upon passing their official exam.

# Outcomes

**After completing this course you will have the:**

- Understanding of the concepts, implementation & objectives of Six Sigma
- Ability to use a structured approach to process improvement
- Ability to use DMAIC (Define, Measure, Analyse, Implement and Control) methodology
- Skill to predict, prevent and control defects in a process
- Understanding of the elements of waste
- Skills to achieve sustainable quality improvement through process improvement
- Understanding of the tools of process discovery
- Understanding of variation in processes
- Skills to reduce variation in processes and achieve predicted outcomes
- Ability to identify, measure and analyse process potential
- Usage of inferential statistics
- Usage of hypothesis testing
- Understanding when to use which Six Sigma methodology
- Ability to use Capability Analysis to control processes
- Knowledge of the interdependence of Lean tools
- Skills to prevent, identify and control defects
- Understanding and use of statistical process control
- Skills to train, document, monitor, respond, and align systems
- Skills to provide sustainable and cost-effective improvement in processes

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# Modules

### Lesson 1: What is Quality (Introduction)

- Understand the history of quality
- Gathering the voice of the customer
- Garvin's five definitions of quality
- Definitions of quality from quality gurus
- Differences in quality between products and services

### Lesson 2: Enterprise-wide View (Introduction)

- Understand the history of continuous improvement
- Six Sigma as a Value
- Six Sigma as a Measure
- Six Sigma as a Metric
- Rolled Throughput Yield
- Six Sigma Approach
- Six Sigma Process
- Six Sigma System

- Six Sigma System

### Lesson 3: Lean (Introduction)

- Understand the history of Lean and the value it brings to an organisation
- The philosophy and goals of Lean Manufacturing
- Understand how Lean integrates with Six Sigma

### Lesson 4: Six Sigma Roles and Responsibilities (Introduction)

- Understand Six Sigma key players
- Understand team stages in six sigma projects
- Understand the different modes of team communication

### Lesson 5: Understanding the Define Phase of Six Sigma (Define Phase)

LSS Green Belt Define Phase - The Define Phase of the DMAIC methodology is constructed to introduce the fundamentals of Lean Six Sigma.

- Describe the two stages of the Define phase<

### Lesson 6: Six Sigma Important Stakeholders (Define Phase)

- Describe the stakeholders in Six Sigma projects
- Understand how the changeover to Six Sigma implementation affects stakeholders

### Lesson 7: Voice of the Customer (Define Phase)

- Understand the importance of the Voice of the Customer is Six Sigma projects
- Comprehending the Voice of the Customer

### Lesson 8: Critical to Quality Flowdown (Define Phase)

- Understand the definition and purpose of Critical to Quality
- Understand the Critical to Quality steps or flowdown

### Lesson 9: Performance Metrics (Define Phase)

- Explain what performance metrics are and they can be used to measure the effectiveness and efficiency of a process and establish goals for a project's anticipated outcome
- Explain the difference between process and business metrics
- Explain the impact of the cots of poor quality (COPQ)
- Know what questions to ask to determine the quality of the performance metrics

### Lesson 10: Project Charter (Define Phase)

- Understand the purpose of a project charter
- Understand the requirements and the elements of a project charter
- Know how to phrase a problem statement
- Know what questions to ask to determine the quality of the performance metrics

### Lesson 11: Wrap Up & Action Items (Define Phase)

### Lesson 12: Processes and Process Characteristics (Measure Phase)

LSS Green Belt Measure Phase - The Measure Phase of the DMAIC methodology is constructed to introduce important Lean Six Sigma tools for characterising your business issues.

- Define a process
- Explain different types of processes
- Explain different process characteristics

### Lesson 13: Process Maps and Flow Chart (Measure Phase)

- Understand how to create a process map
- Understand the different types of process maps
- Describe process flow metrics and how they are used

### Lesson 14: Data Types and Measurement Scales (Measure Phase)

- Describe the difference between attribute and variable data
- Understand the difference between continuous and discrete data
- Understand the difference between nominal, ordinal, interval and ratio scales
- Know how to express data in different scales

### Lesson 15: Data Collection (Measure Phase)

- Understand how to choose different data collection methods
- Know how to use check sheets and when to use different types of check sheets
- Understand the advantages and disadvantages of automated gauging
- Know how to code data and the advantages and disadvantages of coding data
- Understand the concepts of data integrity and accuracy

### Lesson 16: Sampling Strategies (Measure Phase)

- Understand the concept of sampling and the different types of sampling strategies
- Apply probability sampling strategies
- Apply non-probability sampling strategies
- Know how to calculate and determine sample size for continuous and discrete data

### Lesson 17: Fishbone Diagram (Measure Phase)

- Understand the purpose and meaning of the Ishikawa or Fishbone diagram
- Apply the Fishbone diagram

### Lesson 18: Relational Matrix /Prioritisation Matrix (Measure Phase)

- Understand that a relational matrix is a tool used to measure which of the input variables has the greatest effect on output

- Apply non-probability sampling strategies
- Know how to calculate and determine sample size for continuous and discrete data
- Know when and how to use a relational matrix
- Understand the differences between the X-T matrix and the Quality Function Deployment (QFD)

### Lesson 19: Basic Statistics (Measure Phase Module)

- Explain the various statistics used to express location and spread of data
- Describe the characteristics of a Normal Distribution
- Explain the measures of dispersion
- Understand and use measures of symmetry
- Explain the Central Limit Theory
- Explain frequency distribution

### Lesson 20: Graphical Methods (Measure Phase)

- Understand how to construct histograms and differences in distribution shape
- Construct a histogram using Minitab
- Construct a stem and leaf plot
- Construct a box plot
- Construct a run chart
- Explain the significance of P values in relation to hypotheses
- Compare graphical methods and decide which is best to use

### Lesson 21: Gauge R and R (Measure Phase)

- Understand the concept of gauge repeatability and reproducibility
- Understand the concepts of accuracy, precision, linearity, stability and bias
- Apply Gauge R and R
- Apply Gauge R and R regression analysis

### Lesson 22: Process Capability Analysis (Measure Phase)

- Understand causes of variation
- Estimate Capability for Continuous Data
- Describe the impact of Non-normal Data on the analysis presented in this module for Continuous Capability
- Estimate Capability for Attribute Data

### Lesson 23: Wrap Up & Action Items (Measure Phase)

### Lesson 24: Graph and Data Analysis (Analyse Phase)

- Construct a scatter diagram
- Understand correlation and regression analysis
- Apply the method of least square
- Apply a simple linear regression model
- Apply multiple linear regression analysis

### Lesson 25: Multi-Vari Analysis (Analyse Phase)

### Lesson 26: Intro to Hypothesis Testing (Analyse Phase)

- Perform a Multi-Vari Analysis
- Interpret and a Multi-Vari Graph
- Identify when a Multi-Vari Analysis is applicable

- Articulate the purpose of Hypothesis Testing
- Explain the concepts of the Central Tendency
- Be familiar with the types of Hypothesis Tests
- Statistical inference
- Understand the concepts between statistical and practical significance
- Calculate point and interval estimations
- Calculate margin of error and sample size
- Calculate confidence intervals

### Lesson 27: Hypothesis Testing Normal Data (Analyse Phase)

- Determine appropriate sample sizes for testing Means
- Conduct various Hypothesis Tests for Means
- Properly Analyse Results
- Be able to conduct Hypothesis Testing of Variances
- Understand how to Analyse Hypothesis Testing Results

### Lesson 28: Hypothesis Testing Non-Normal Data (Analyse Phase )

- Conduct Hypothesis Testing for equal variance
- Conduct Hypothesis Testing for Medians
- Analyse and interpret the results
- Calculate and explain test for proportions
- Calculate and explain contingency tests

### Lesson 29: Pareto Charts (Analyse Phase)

- Explain the objectives of a Pareto chart
- Construct a Pareto chart
- Test proportion = specified value
- Test if two proportions are equal

### Lesson 30: Failure Mode and Effects Analysis (Analyse Phase)

- Explain the of conducting FMEA and its various elements
- Explain and calculate Risk Priority Number
- Understand procedures involved in conducting FMEA
- Understand differences of design and process FMEA
- Explain advantages and disadvantages of conducting FMEA

### Lesson 31: Non-Value Added Activities (Analyse Phase)

- Understand the seven types of process waste
- Understand the difference between value and non-value added activities

### Lesson 32: Value Stream Mapping (Analyse Phase)

- Understand VSM process and symbols used
- Create a Value Stream Map

- Identify non-value added activities from process maps

- Understand the difference between cycle time and takt time
- Know when to use Lean Systems
- Construct a spaghetti chart
- Outline the benefits of VSM

### Lesson 33: Wrap Up & Action Items (Analyse Phase)

### Lesson 34: Generate New and Re-used Solutions (Improve Phase)

LSS Green Belt Improve Phase - The Improve Phase of the DMAIC methodology is constructed to introduce important Lean Six Sigma tools for properly controlling solutions.

- Generate solution ideas
- Apply six thinking hats to evaluate solutions
- Understand the role of bench-marking solutions
- Understand the concept of process entitlement

### Lesson 35: 5S (Improve Phase)

- Understand the 5 concepts in the 5S model
- Understand the effect of 5S on improvements

### Lesson 36: Evaluate and select top solution (Improvement Phase)

- Understand the approach to design and implement a solution
- Prepare process maps that reflect the desired state
- Understand the concept of poka-yoke (mistake proofing)
- Understand the steps to pilot the top solution

### Lesson 37: Designing Experiments (Improve Phase)

- Understand the concept of experiment design and the terminology
- Describe the difference between a physical model and a DOE model
- Explain an OFAT experiment and its primary weakness
- Shown Main Effects Plots and interactions, determine which effects and interactions may be significant
- Create a Full Factorial Design

### Lesson 38: Kaizen and Kanban and Theory of Constraints (Improvement Phase)

- Understand the concept of Kaizen and Demming cycle and a Kaizen event
- Understand the concept of Kanban and the Push vs Pull system of production
- Know how to create strategic buffer
- Understand the Theory of Constraints and the five focusing steps

### Lesson 39: Wrap Up & Action Items (Improve Phase)

### Lesson 40: Statistical Process Control - SPC (Control Phase )

- Describe the elements of an SPC Chart and the purposes of SPC
- Understand how SPC ranks in defect prevention
- Describe the special cause detection rules
- Design subgroups if needed for SPC usage
- Understand the differences between Attribute and Continuous Control Charts
- Create an I-MR control chart
- Create an X-bar R chart
- Create an X-bar S chart
- Create P and Np charts
- Create a U chart
- Create time-weighted charts
- Explain the purpose of a Visual Factory

### Lesson 41: Total Productive Maintenance (Control Phase)

- Explain the concept of TPM
- Understand the 8 pillars of TPM
- Explain the benefits of TPM

### Lesson 42: Selecting Solutions (Control Phase)

- Conduct a cost benefit analysis to select the best solution
- Understand the requirement to reanalyse the measurement system
- Understand how the Lean tools depends on each other
- Understand how tools must document the defect prevention created in the Control Phase

### Lesson 43: Control Plan (Control Phase)

- Understand the purpose of a Control Plan
- Understand the purpose of a documentation plan
- Understand the concept of lessons learned

### Lesson 44: Wrap Up & Action Items (Control Phase)

Talk to our expert team

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