



# LEAN SIX SIGMA GREEN BELT CERTIFICATION SYLLABUS

Program Code: LSS-GB / DTC-01

**Duration:** 40–60 hours (5–8 days intensive or 6 weeks blended)

**Format:** Online / On-site / Blended

**Target Audience:** Supervisors, Engineers, Analysts, Quality Coordinators, and Professionals seeking advanced Lean Six Sigma skills.

**Prerequisites:** Lean Six Sigma Yellow Belt or equivalent experience.

## 1. Program Objectives

At the end of the Green Belt program, participants will be able to:

- Lead and manage Lean Six Sigma projects using the DMAIC methodology.
- Apply analytical tools to identify and solve process problems.
- Quantify improvement opportunities and measure performance using data.
- Facilitate Lean initiatives and engage cross-functional teams.
- Deliver sustainable results through structured problem-solving and control plans.

## 2. Learning Outcomes

Participants will be able to:

- Demonstrate proficiency in the five DMAIC phases with real-world application.
- Analyze data using statistical tools to identify root causes.
- Implement Lean techniques to eliminate waste and improve flow.
- Manage improvement projects independently and ensure measurable business impact.
- Communicate project outcomes effectively to stakeholders and management.

## 3. Course Structure (Modules Overview)

Module	Content	Tools / Techniques
Module 1 – Lean Six Sigma Fundamentals	Recap of Lean and Six Sigma concepts; relationship between Lean and Six Sigma; overview of DMAIC methodology.	SIPOC, Value Stream Mapping, PDCA



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Module 2 – Define Phase	Project selection and scoping; customer requirements; problem definition and charter development.	Project Charter, VOC, SIPOC, CTQ Tree
Module 3 – Measure Phase	Process mapping, data collection, and measurement system analysis; baseline capability calculation.	Flowchart, Data Collection Plan, Gage R&R, Process Capability (Cp, Cpk)
Module 4 – Analyze Phase	Root cause identification and validation; graphical and statistical analysis; hypothesis testing.	Fishbone Diagram, Pareto Chart, 5 Whys, Correlation, Regression, Hypothesis Testing
Module 5 – Improve Phase	Idea generation, pilot testing, and implementation planning; risk analysis and project control.	Brainstorming, FMEA, Poka-Yoke, Kaizen
Module 6 – Control Phase	Monitoring, process standardization, and sustaining improvements.	Control Charts, SOP, Visual Management, SPC
Module 7 – Lean Tools Integration	Lean principles, value flow, and waste elimination for improved efficiency.	5S, SMED, Kanban, Standard Work, Continuous Flow
Module 8 – Data Analysis & Statistics for Green Belts	Introduction to Minitab or Excel tools for data analysis; descriptive and inferential statistics.	Histogram, Boxplot, ANOVA, DOE Basics
Module 9 – Change Management and Leadership	Team dynamics, stakeholder management, and communication planning.	RACI, Stakeholder Matrix, Communication Plan



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Module 10 – DMAIC Project Implementation (Practical Module)	Execution of a real-life improvement project applying all DMAIC phases; A3 / storyboard documentation.	DMAIC Templates, A3 Report, Project Dashboard
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## 4. Teaching Methodology

- Blended approach combining lectures, simulations, and real-world case studies.
- Interactive workshops and group discussions.
- Practical application through individual and group projects.
- Use of visual and analytical tools to reinforce understanding.
- Continuous feedback and coaching from certified instructors.

## 5. Testing & Certification Requirements

Certification is granted based on demonstrated competency and successful completion of the following assessments:

1. Written Examination – 75 multiple-choice and scenario-based questions (90 minutes) with a minimum passing score of 75%.
2. Practical Project – Completion of one improvement project applying the DMAIC methodology.
3. Oral Defense – 15-minute presentation and Q&A before a panel of instructors.

## 6. Instructor Qualifications

All instructors are Certified Lean Six Sigma Black Belts or Master Black Belts with:

- Over 10 years of professional and project experience.
- Proven expertise in Lean and Six Sigma project deployment.
- Recognized certification under ISO 17024-compliant bodies.

## 7. Reference Materials

- ISO 13053-1/2: Quantitative Methods in Process Improvement
- ISO 18404: Competencies for Key Personnel and Their Organizations in Relation to Six Sigma and Lean Implementation



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- The Lean Six Sigma Pocket Toolkit – George, Rowlands & Price
- The Certified Six Sigma Green Belt Handbook – ASQ
- Deming Continuous Improvement Manual – DTC Edition

## 8. Project Evaluation Rubric

Evaluation Criteria	Description	Weight (%)
Project Definition	Clarity of problem statement, scope, and objectives.	15
Data Collection & Analysis	Appropriateness and accuracy of data used for analysis.	25
Root Cause Identification	Logical and data-driven identification of root causes.	20
Solution Design & Implementation	Relevance and effectiveness of improvement actions.	20
Control & Sustainability	Demonstration of sustained results and control plans.	10
Presentation & Communication	Professionalism and clarity in project presentation.	10

## 9. Certification Award

Upon successful completion of the training, examination, and project, participants receive: Certificate of Achievement – Lean Six Sigma Green Belt issued by Deming Training Center, aligned with international Lean Six Sigma standards.