

Certified Six Sigma Green Belt: Operational Excellence and Data-Driven Improvement

Introduction

In today's competitive and performance-driven environment, organisations cannot afford recurring defects, inefficiencies, delays, and rework. Sustainable operational excellence requires more than experience or intuition. It demands structured methodology, data-driven decision-making, and disciplined execution.

Certified Six Sigma Green Belt: Operational Excellence and Data-Driven Improvement is a professional certification programme designed to equip participants with the capability to lead measurable process improvement initiatives using the globally recognised DMAIC framework. The programme integrates Lean principles and statistical tools to systematically reduce variation, eliminate waste, improve quality, and strengthen business performance.

This certification goes beyond conceptual understanding. Participants develop practical skills to define improvement opportunities, measure process performance accurately, analyse data to identify validated root causes, implement targeted improvements, and establish control mechanisms to sustain gains. The programme emphasises real-world application, project-based thinking, and measurable business impact.

By completing this certification, participants demonstrate their ability to apply structured problem-solving methodology, lead cross-functional improvement initiatives, and deliver quantifiable operational results aligned with organisational objectives.

Program Objective

- To equip participants with structured knowledge of Lean Six Sigma principles and DMAIC methodology
- To develop competency in identifying, analysing, and solving process problems using data
- To strengthen capability in reducing variation, defects, and operational waste
- To enable participants to lead improvement projects that deliver measurable business results
- To build internal capacity for continuous improvement within the organisation

Learning Outcomes

By the end of the programme, participants will be able to

- Explain Lean Six Sigma principles and the DMAIC framework
- Define and scope improvement projects aligned with business priorities
- Map processes and identify performance gaps
- Collect and analyse data using basic statistical tools
- Identify root causes of defects and process variation

- Develop and implement improvement solutions
- Establish control mechanisms to sustain improvements
- Present project outcomes with measurable impact

Who Should Attend

This programme is suitable for supervisors, engineers, quality and compliance officers, process owners, analysts, project managers, and functional managers who are responsible for improving operational performance, reducing defects, and leading structured improvement initiatives within their organisation.

Program Outline

Day 1: Define Phase – Project Foundation and Business Alignment

Session 1: Introduction to Lean Six Sigma

- Evolution of Lean and Six Sigma
- Roles and responsibilities in improvement projects

- Overview of DMAIC methodology

Session 2: Understanding Business Impact

- Critical to Quality (CTQ) concepts
- Cost of Poor Quality (COPQ)
- Linking improvement to strategic objectives

Session 3: Project Selection and Charter Development

- Criteria for selecting viable projects
- Voice of Customer (VOC) analysis
- Developing a clear problem statement
- Preparing a structured project charter

Day 2: Measure Phase – Understanding Current Performance

Session 4: Process Mapping and SIPOC

- High-level and detailed process mapping
- Identifying inputs, outputs, and stakeholders

Session 5: Data Collection Planning

- Identifying key performance metrics
- Sampling techniques

- Ensuring data integrity and reliability

Session 6: Basic Statistical Tools

- Descriptive statistics
- Graphical analysis (histogram, Pareto chart, run chart)
- Understanding variation

Day 3: Analyse Phase – Identifying Root Causes

Session 7: Root Cause Analysis Tools

- 5 Why technique
- Fishbone diagram
- Pareto analysis

Session 8: Statistical Analysis for Root Cause

- Correlation and basic hypothesis testing
- Identifying patterns and trends
- Validating root causes with data

Day 4: Improve Phase – Developing and Implementing Solutions

Session 9: Lean Improvement Principles

- Identifying waste
- Process flow optimisation

Session 10: Solution Generation and Evaluation

- Brainstorming and prioritisation matrix
- Risk assessment of proposed solutions
- Pilot testing and validation

Session 11: Basic Design of Experiments (DOE) Concepts

- Introduction to experimentation
- Optimising process variables

Day 5: Control Phase – Sustaining the Gains

Session 12: Control Plans and Standardisation

- Developing control charts
- Documentation and standard operating procedures
- Mistake-proofing concepts

Session 13: Monitoring and Reporting

- Key performance indicators
- Visual management dashboards
- Project closure and lessons learned

Session 14: Project Presentation and Review

- Structuring project reports

- Communicating results to stakeholders
- Feedback and improvement planning