Six Sigma Green Belt Certification: Process Improvement

23 – 27 August 2027
Cape Town (South Africa)



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Why This Course

In today's competitive landscape, organizations must continuously improve processes, eliminate inefficiencies, and deliver consistent quality. Six Sigma Green Belt professionals play a critical role in driving operational excellence through structured problem-solving and data-driven decision-making.

The Six Sigma Green Belt Certification Masterclass is an intensive 1-week program designed to equip participants with the practical skills, analytical tools, and leadership capabilities needed to lead impactful improvement projects. Through hands-on exercises, real data analysis, and project-based learning, participants will gain the confidence and expertise required to deliver measurable, sustainable improvements.

What You'll Learn and Practice

By the end of this program, participants will be able to:

- Apply the DMAIC Define, Measure, Analyze, Improve, Control methodology to real-world challenges.
- Use statistical and analytical tools to identify process inefficiencies and root causes.
- Implement Lean principles to reduce waste and improve operational flow.
- Lead Six Sigma projects with strong planning, communication, and change management skills.
- Execute advanced problem-solving techniques to deliver long-term quality improvements.

Program Flow

Day 1: Introduction to Six Sigma & Define Phase

- Understanding Six Sigma principles, roles, and the DMAIC roadmap.
- Selecting improvement projects and developing SMART project charters.
- Capturing customer requirements using VOC and translating them into CTQs.
- Creating process maps using SIPOC and Value Stream Mapping to visualize workflows.
- Workshop: Building a project charter and mapping a real process.



Day 2: Measure Phase

- Planning data collection strategies and selecting appropriate sampling methods.
- Conducting Measurement System Analysis MSA and Gage R&R studies.
- Evaluating baseline performance through process capability indices Cp, Cpk.
- Introduction to Minitab for data entry, visualization, and statistical analysis.
- Exercise: Evaluating measurement variation and baseline capability.

Day 3: Analyze Phase

- Applying Exploratory Data Analysis EDA to understand data patterns.
- Conducting hypothesis testing to validate findings.
- Using correlation and regression analysis to identify key drivers of performance.
- Root cause identification using Fishbone diagrams, 5 Whys, and other tools.
- Case Study: Root cause analysis of a real-world defect scenario.

Day 4: Improve & Control Phases

- Introduction to Design of Experiments DOE for optimizing processes.
- Evaluating and selecting improvement solutions using prioritization matrices.
- Planning and managing implementation using change management principles.
- Applying Statistical Process Control SPC and control charts to sustain gains.
- Workshop: Creating a control plan and designing an improvement pilot.

Day 5: Lean Principles & Project Management

- Applying Lean tools: 5S, Visual Management, Standard Work, and waste elimination.
- Strengthening project management capabilities for Six Sigma initiatives.
- Leading teams effectively through improvement cycles.
- Simulation of a complete Six Sigma project with data, analysis, and solutions.
- Simulation: Capstone project walkthrough from Define to Control.

Individual Impact

- Confidently lead cross-functional improvement projects that deliver measurable ROI.
- Strengthen analytical thinking and data interpretation skills.
- Gain recognized certification credentials as a Six Sigma Green Belt.
- Build stronger leadership and team collaboration capabilities.

Organizational Impact

- Improved productivity, quality, and cost efficiency through structured improvement.
- Enhanced problem-solving culture driven by data and continuous improvement.
- Reduced process variation, defects, and operational waste.
- Stronger talent pipeline of certified Six Sigma professionals.



Training Methodology

The program uses a practical, hands-on approach through:

- Statistical analysis exercises using Minitab.
- Real-world case studies and project simulations.
- Group collaboration, brainstorming, and problem-solving workshops.
- Expert coaching and guided practice for all DMAIC phases.

Beyond the Course

Participants will return with a complete toolkit of Six Sigma and Lean methodologies—ready to tackle process challenges, lead improvement teams, and drive operational excellence as certified Green Belt practitioners.

