



# CERTIFIED LEAN SIX SIGMA BLACK BELT

## Four Months International Certification from SQII

### Program Overview

This is an advance course in Six Sigma and considered one of the most important international courses for managing and improving organizational Quality. This program imparts a thorough in-depth knowledge and understanding of all aspects of Lean and Six Sigma. Being used initially by big companies, Lean Six Sigma applies instruments and techniques with the aim of eliminating defects and reducing the process variation. It is a proven pathway for enterprise-wide productivity, quality and efficiency improvements.

Lean Six Sigma uses the analogy of belt colors (often associated with martial arts) to designate competence in applying lean six sigma tools to problem solving and process improvement. The advance level is called 'Six Sigma Black Belt'. A

Black Belt leads complex problem-solving projects. Trains and coaches project teams. Understands all aspects of the DMAIC model in accordance with Six Sigma principles.

The Lean Six Sigma Black Belt course is specially designed to provide practical exposure to the participants with practical business improvement projects assigned to them by their management sponsor along with hands-on learning experience with advance Minitab statistical software so that they can boost their company's bottom line and can actually build the company to a world-class level.

### Learning Outcomes

At the end of the course, you will be able to:

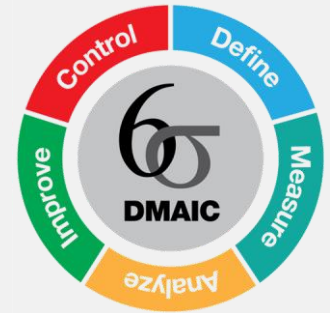
- ✓ UNDERSTAND the advance Lean Six Sigma tools a Black Belt would be expected to use when on a project team
- ✓ LEARN how to Identify and Manage Lean Six Sigma projects relevant to their organizational growth
- ✓ APPLY Lean Six Sigma in organizations to solve complex quality problems and elimination of wastage
- ✓ BUILD a foundation for break through performance
- ✓ FUNCTION as the stepping stone towards Master Black Belt Certification

## Course Content

The body of knowledge of this course is compatible to the one defined by the American Society of Quality–ASQ®.

Following are the topics to be covered in the course:

- Basics of Quality
- Introduction to Six Sigma
- History of Lean & Six Sigma
- Lean Manufacturing Fundamentals
- Difference between Lean & Six Sigma
- Eight Deadly Lean Wastes
- Understanding of DMAIC Methodology, Tools & Techniques:



Phase-I		Phase-II	Phase-III	
Define	Measure	Analyze	Improve	Control
<ul style="list-style-type: none"> <li>• Project Selection &amp; Prioritization</li> <li>• SWOT Analysis</li> <li>• DPMO Calculations &amp; Baseline Sigma</li> <li>• Project Charter</li> <li>• Communication Plan</li> <li>• Stakeholder Analysis</li> <li>• Voice of Customer</li> <li>• Critical-To-Quality (CTQ) Tree</li> <li>• SIPOC: High Level Process Map</li> <li>• Six Sigma Team Dynamics &amp; Management</li> <li>• Development of Key Performance Indicators (KPIs)</li> <li>• KANO Model of Quality</li> </ul>	<ul style="list-style-type: none"> <li>• Introduction to Minitab</li> <li>• Data Collection Plan</li> <li>• Descriptive Statistics</li> <li>• Graphical Analysis</li> <li>• Cost of Quality</li> <li>• X-Y Matrix</li> <li>• Cause &amp; Effect Diagram</li> <li>• Pareto Chart</li> <li>• Value Stream Mapping</li> <li>• Takt Time</li> <li>• Measurement System Analysis</li> <li>• Process Capability Studies</li> </ul>	<ul style="list-style-type: none"> <li>• 5 Whys Analysis</li> <li>• Basic Probability &amp; Probability Distributions</li> <li>• Inferential Statistics</li> <li>• Confidence Interval</li> <li>• Sampling</li> <li>• Central Limit Theorem</li> <li>• Introduction to Hypothesis Testing</li> <li>• Parametric &amp; Non-Parametric Hypothesis Tests</li> <li>• Analysis of Variance (ANOVA)</li> <li>• Correlation Analysis</li> <li>• Simple &amp; Multiple Linear Regression Analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Piloting &amp; Implementation</li> <li>• Basic DOE</li> <li>• Optimization Method</li> <li>• Validation Solutions •</li> <li>Lean Tools:                             <ul style="list-style-type: none"> <li>○ Kaizen</li> <li>○ Gemba</li> <li>○ Push Vs Pull System</li> <li>○ Poke-Yoke (Mistake-Proofing)</li> <li>○ Jidoka (Autonomation)</li> <li>○ 5S: Industrial Housekeeping</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Failure Mode &amp; Effect Analysis (FMEA)</li> <li>• Basics of Statistical Process Control</li> <li>• Attribute &amp; Variable Control Charts</li> <li>• Control Plan</li> <li>• Standard Work/SOP</li> </ul>

- Case Studies & Success Stories
- Individual & Team Exercises
- Phase-Wise Quizzes & Mock Exam
- Lean Six Sigma Black Belt Project Discussion

## Lean Six Sigma Black Belt Project

The participants are required to work on real life projects assigned to them by their management sponsor from the organizations in which they are working. The projects will be of a practical nature and should be completed within the stipulated timeframe. A comprehensive Lean Six Sigma Black Belt Project Report is required to be submitted in accordance with the laid down criteria, format and course coverage.

## Course Duration

Lean Six Sigma Black Belt is a four months course spread over three months, with 4-5 days class per month conducted on Sundays and a take home project to be submitted in the fourth month. The distribution of days is as follows:

- Phase-I: Five days classes with take home assignments
- Phase-II: Five days classes with take home assignments
- Phase-III: Five days classes with take home assignments
- Project Submission: One month after completion of Phase-III

## Who is this Course For?

This course is designed for individuals from diverse organizational functions - Quality, Engineering, Production, Finance, Logistics, Sales, Security who are interested in understanding the concepts, tools and methodologies of Lean and Six Sigma and wants to ensure a long-term continuous improvement culture and looking to get most out of their career.

Participants are normally process owners or leaders from service or product based industry and are well versed in technical aspects of their jobs and have worked on project teams with sound knowledge of statistics and quality tools.

## Award of Certification

Participants will receive internationally recognized Lean Six Sigma Black Belt Certification from Singapore Quality Institute International (SQII) upon successful completion of course, as well as qualifying the exam and the Lean Six Sigma project.

## About Trainer

Internationally experienced and qualified Lean Six Sigma Black Belts. All the trainers are approved tutors by SQII, and they have worked on number of Six Sigma Projects for multifarious companies.

Every Sunday | 9:30 AM - 4:30 PM | PIQC INSTITUTE OF QUALITY

This Includes:

- ✓ Course Material, Support Files & Templates
- ✓ Certificate of Participation
- ✓ Lunch & Refreshments
- ✓ Business Networking
- ✓ Post-Training Counselling Services

FOR REGISTRATION & DETAILS PLEASE CONTACT:

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