

**LOCATION: ADELAIDE, SOUTH AUSTRALIA**

# Lean Sigma Experts Australia

**Lean Six Sigma Certification  
Black Belt Level (8 Days)  
Classroom Sessions  
Accelerated Course**



**Dates: 21<sup>st</sup> to 23<sup>rd</sup> June 2017,  
+ 28<sup>th</sup> to 30<sup>th</sup> June 2017,  
+ 5<sup>th</sup> & 6<sup>th</sup> July 2017  
Price: \$4,715 plus GST  
(Includes Exam & Certification)**

*Internationally Accredited By:*



ACCREDITED BY **PEOPLECERT**  
GROUP

**Lean Sigma Experts Australia (ABN 81 604 347 604)**

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# Lean Six Sigma Certification

## ***BLACK BELT ACCELERATED CLASSROOM TRAINING – 8 DAYS***

Lean Six Sigma is a proven systematic approach to improve measurable results for any organization – whether manufacturing or service (logistics, health, hospitality, finance, councils & public administration). The Lean Six Sigma Black Belt training takes organizations to the next level by uniting product and process excellence with goals such as improving customer service and/or enhancing shareholder value creation. Leaders in today's organizations are turning to the Lean Six Sigma Black Belt training to enhance competitive edge, improve service and build the skill base needed to sustain performance improvement.

### **WHO SHOULD ATTEND**

Chief Executive Officers, Managing Directors, Executive Officers, General Managers, Managers, Executives, Engineers, Continuous Improvement Specialists, and Others

### **DEPARTMENTS**

Business Process Improvement, Change Management, Continuous Improvement, Project Management, Industrial Engineering, Production Management, Quality Management, Logistics, Contract Department, Innovation Department, Commercial Department, Business Development, Strategic Planning, Human Resource, Finance & Others.

### **LSS BLACK BELT PROGRAMME CONTENT:**

Training Objectives:

- The Black Belt Course is designed to improve process performance, deliver high-impact projects and achieve significant cost savings.
- The Certified Lean Six Sigma Black Belt is a professional who can explain Lean Six Sigma philosophies and principles, including supporting systems and tools.
- Black Belts will demonstrate team leadership, understand team dynamics and assign team member roles and responsibilities.
- Black Belts will gain thorough understanding of all aspects of the DMAIC model in accordance with Six Sigma principles.
- Black Belts will gain knowledge of Lean enterprise concepts, are able to identify non-value-added elements and activities.

## **SESSION 1: DEFINE & MEASURE PHASE**

### DEFINE & MEASURE PHASE / 3 Days

- Introduction & Overview of Six Sigma
- Cost of Poor Quality (COPQ)
- Drill Down Tree & Pareto Chart
- Project Charter Development
- Teams & Stakeholder Analysis
- Voice of Customers (VOC) & Kano Model
- SIPOC & Basic Process Mapping
- Quality Functional Deployment (QFD)
- Financial Analysis and Cost Savings
- Root Cause Analysis (RCA) Tools
- Cause & Effect Matrix
- Operational Definition
- Data Collection Plan
- Basic Statistics and Sampling Techniques
- Measurement System Analysis (MSA)
- Capability Analysis and Sigma Value
- Graphical & Value Analysis
- Detailed Process Mapping
- Fishbone Diagram
- Failure Modes and Effects Analysis (FMEA)

## **SESSION 2: ANALYSE PHASE**

### ANALYZE PHASE / 2 Days

- Hypothesis Testing
- Advanced Statistical Root Cause Analysis tools:
  - Type 1 & Type 2 error
  - Degree of Freedom
  - Power and Sample Size
  - 1 Sample t-Test
  - 2 Sample t-Test
  - One way ANOVA
  - Test of Equal Variance (TOEV)
  - 1 Proportion Test
  - 2 Proportion Test
  - Paired t-Test
  - Chi-Square Test
  - Non-Parametric Analysis and Two Way ANOVA
- Advanced Graphical Analysis
  - Sigma Value / Z-Bench
  - Graphical Tools for Statistics
  - Pareto Charts
  - Box Plots

- Run Charts
- Dot Plots
- Scatter Plots
- Matrix Plots
- Histograms
- Time Series Plots
- Regression Analysis
  - Correlation Analysis
  - Multiple Regression
  - Simple Linear Regression
  - Best Subset Regression
- Value Stream Mapping (VSM)
- Summarising Potential Factors and Potential Solutions

### SESSION 3: IMPROVE & CONTROL PHASE

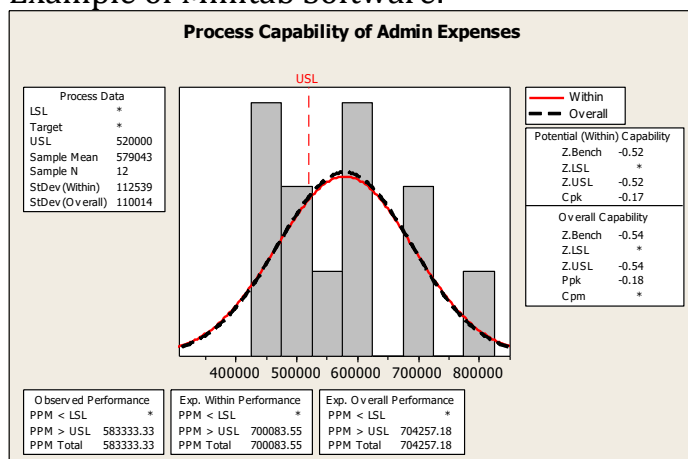
#### IMPROVE & CONTROL PHASE / 3 Days

- Generating Improvement Ideas
- Design of Experiment (DOE)
- Evaluating & Selecting Best Solutions
- Solution & Training Implementation Plan
- Develop & Execute Pilot Plan
- Lean Enterprise Training
- Cost & Benefit Analysis (ROI)
- Process Control Plan
- Standard Operating Procedures (SOP)
- Statistical Process Control (SPC)
- Best Practice and Replication Opportunities
- Process Ownership and Dashboards

### MINITAB DURING BLACK BELT LEAN SIX SIGMA TRAINING

Where applicable, during the training course, our consultants will provide the participants with training on how to analyse Quality data using the Minitab software which is widely used by Lean Six Sigma practitioners.

Example of Minitab Software:



**OUR CONSULTANTS WILL ALSO PROVIDE CANDIDATES WITH USEFUL EXCEL QUALITY TEMPLATES AND TOOLS**



## **Examination and Certification**

We will administer an examination for the participants upon completion of their training. The examination consists of the following (on last day of training):

### ***LSS BLACK Belt Level (SSC & IASSC Accredited)***

Exam Type: Multiple Choice Questions  
No. of Questions: 50 Questions  
Examination: Open Book Examination  
Passing Rate: 70% and above  
Duration of Exam: 2 Hours  
Location of Exam: At training location  
Cost: Inclusive of training



## **The Trainers / Consultants**

### **Lean Six Sigma Expert & Designated Consultant**

**Mr. Gurbachan Singh**

**Senior Consultant – Full Time**



Gurbachan Singh is a well-rounded professional. He has over 32 years of exposure to a broad range of manufacturing industry and management consulting; over 20 years in executive management and more than 10 years in management consulting; Business Process Diagnostics, Supplier Development, Quality, LEAN Six Sigma, Industrial Engineering, Project Management, Plant-wide Cost Optimisation, Leadership & Performance development.

He has a Bachelor Degree in Engineering, Post-graduate Diploma in Manufacturing Engineering, Lean Six Sigma Black Belt and PRINCE2 foundation certification. His industry background spans many different sectors that include high technology precision electronics (Hitachi Semiconductor), heavy industry (Air Radiators), truck manufacture (Iveco), automotive components (DMG-Venture), white goods (Olympic Group), and pharmaceuticals (CSL).

In consulting he has been an operations advisor, programme developer, facilitator and project manager with various organizations such as PAC Project Advisors, Australia, ACTZEL Consulting, Australia, Penang Skills Development Centre (PSDC) and ARGI Institute of Manufacturing, Penang. He has travelled extensively to conduct projects in Australia, USA, Malaysia, India, Thailand, Hong Kong, Japan, Egypt and the UAE.

**DR. SATNAM SINGH**  
**SENIOR CONSULTANT – FULL TIME**



- ✓ **PhD** in Engineering & Manufacturing Management (**Lean and Six Sigma**)  
- Coventry University, United Kingdom
  - ✓ **MSc** in Engineering & Manufacturing Management - Coventry University,  
United Kingdom
  - ✓ **B. Eng. (Hons)** in Mechanical Engineering - Liverpool John Moores University, United  
Kingdom
  - ✓ **Diploma** Business Studies and Management - ACT College, London UK
  - ✓ **Certified** Six Sigma Black Belt / Master Black Belt (MBB) Project Manager - XR Training &  
Consultancy (UK) / Federal Mogul Corporation (Europe)
- Expert in Lean Six Sigma, Process Improvements and Lean Enterprise Solutions.
  - Specialist in process optimization, cost reductions, deploying process excellence strategies.
  - Trainer in Lean Six Sigma and Lean Enterprise Programmes.

**EXPERIENCE**

For more than 15 years, Dr. Satnam Singh has been delivering process excellence projects, performance improvements, and change management in industries such as automotive, construction, engineering, textile, chemicals, electronics and many product manufacturing companies. He has:

- Assisted many organizations in improving process performance using the tools and techniques of Six Sigma and Lean, and has expertly used appropriate data collection and analysis methods to accelerate process improvement projects.
- Trained and mentored Project Champions, Finance Executives, Yellow Belts, Green Belts and Black Belts for Six Sigma Lean Enterprise Solutions.
- Led many Six Sigma activities in Europe and Asia that yielded millions of dollars in company savings.
- Experienced Six Sigma Statistical Software such as Minitab (Version 16) and Sigma Excel.
- Developed training materials and Lean Six Sigma games for training.
- Delivered turnkey Mechanical Projects for Process and Cost Efficiency.

**EXPERTISE**

- Lean Six Sigma and Lean Deployment Consultation and Facilitation.
- Lean Six Sigma Project Selections, Execution & Management.
- Lean Six Sigma Project Consultancy and Training Material Development.
- Lean Six Sigma Training, Project Coaching & Mentoring.
- Supplier Development using Cost Reduction Techniques and Process Excellence Metrics.
- Lean Systems Designing & Re-designing.
- Strategic Planning & Project Management.
- Execution of Process Improvement Initiatives.
- Quality Assurance and Standard Operating Procedures.
- Operations and Supply Chain Management.
- Delivering Turnkey / CAPEX Mechanical related Engineering Projects for Cost Efficiency.

## MAJOR ACHIEVEMENTS

- Dr. Satnam's most recent success is in the deployment of Lean Six Sigma in a major Government Linked Company in Malaysia, where he trained and coached 11 Black Belts and 17 Green Belts and achieved a savings of RM32million (hard savings) within 12 months of deployment.
- Published several academic papers on Conferences and Journals namely the most esteemed International Journal of Production Research.
- Work experience includes projects for leading companies in Europe (UK, Sweden, France, Germany and Romania) and Asia (Malaysia and Indonesia).
- Languages: English, Bahasa Malaysia, Bahasa Indonesia, Punjabi, Tamil, Hindi.
- Industrial Achievements:
  - Major Nuclear Plant in the UK dealing with workplace improvement, health and safety implementation, safe working procedures, medium to large scale engineering modifications and nuclear inspectorate installation inspections.
  - Multi-National Company (MNC) based in Europe dealing with Lean and Six Sigma Deployment whilst completing medium to large scale engineering CAPEX projects between £0.5m to £ 3m.
  - Local Asian Consulting firm dealing with Wide Scale Lean Six Sigma Deployment in a Government Linked Company (GLC) and several government agencies in training, coaching, project execution of Lean Six Sigma projects (Achievement: RM40 million hard savings).

## CREDENTIALS

Dr. Satnam Singh graduated from Liverpool John Moores University (UK) with a Bachelor Degree in Mechanical Engineering. He then furthered his studies at Coventry University in UK and was awarded with a Masters Degree of Science in Engineering and Manufacturing Management. Dr. Satnam then continued to study for his doctorate and was awarded with a PhD in Engineering and Manufacturing Management. Dr. Satnam has been actively involved in the field of Continual Improvement activities since the beginning of his tertiary education. While accomplishing his Master Degree in the United Kingdom, he had been extensively trained for Lean Systems and Six Sigma whilst working as a Project Manager for a Multi National Corporation (MNC) in the UK for 12 years. During his stay with the MNC in the UK, Dr. Satnam was tasked with the responsibility of promoting and implementing Lean and Six-Sigma within the Organization and throughout Europe. Due to his extensive exposure in Lean and Six-Sigma Management Systems, he was invited by the company's European Subsidiaries to conduct in-house training, project consultations and strategic planning in the area of Six-Sigma implementation.

## PUBLICATIONS

- **Pre-requisites For Managing The Integration of Environmental Performance Into Product Variety Manufacture: A Case Study Approach**, Proceedings SMESME 2006: 8<sup>th</sup> International Conference on Stimulating Manufacturing Excellence in Small and Medium Enterprises, Coventry United Kingdom, 26-28 June 2006., 118-125. ISBN 1-84600-012-2
- **A Systematic Way of Identifying Environmental Aspects and Development of Environmental Management Programs**, Proceedings SMESME 2006: 8<sup>th</sup> International Conference on Stimulating Manufacturing Excellence in Small and Medium Enterprises, Coventry United Kingdom, 26-28 June 2006, 102-109. ISBN 1-84600-012-2.
- **The Design of a Sustainable Manufacturing System: A Case Study of Its Importance to Product Variety Manufacturing**, *Proceedings I\*PROMS 2006: 2<sup>nd</sup> Virtual International Conference on Intelligent Production Machines and Systems*, Online at <http://conference.iproms.org/>, 3-14 July 2006, Cardiff, UK. ISBN-13: 978-0-08-045157-2.
- **Exploring The Relationship Between Lean Manufacturing and Environmental Performance: A Case Study Approach**, Proceedings CARs & FOF 2006: 22<sup>nd</sup> International

Conference on CAD/CAM, Robotics and Factories of The Future, Narosa Publishing, 19-22 July 2006, Vellore, India, 432-439, ISBN-13:978-81-7319-792-5.

- **Integrated Environmental Process Planning for the Design and Manufacture of Automotive Components**, International Journal of Production Research: Special Issue on Sustainable Production, Vol. 45, Nos. 18–19, 15 September –1 October 2007, pp. 4189–4205.
- **Working Paper: Six Sigma in Education**, Proceedings: 1<sup>ST</sup> Conference on Six Sigma in Education 2008, University Malaya, Kuala Lumpur, Malaysia, 27 August 2008, 1-13. (Catalogued at University Malaya Za’ba Memorial Library: Malaysiana Index Database INDXDB).
- **Working Paper: Six Sigma in Construction**, Proceedings: Construction Industry Development Board (CIDB) Malaysia, Conference on Six Sigma in Construction 2008, Grand Seasons Hotel, Kuala Lumpur, Malaysia, 30 October 2008, pp. 1-15.
- **Working Paper: Six Sigma in TQM**, Proceedings: Construction Industry Development Board (CIDB) Malaysia, Conference: Embracing TQM in Construction – Way Forward 2008, Grand Seasons Hotel, Kuala Lumpur, Malaysia, 25 November 2008, pp. 1-19.
- **Beating Recession With A Black Belt**, Published in Berita BMCC, July – Aug 2009: Issue 66 PP 11826/12/2009, pp. 18.