



CBIS Business
Compliance
and Excellence

We Provide a Simple, Smart and
Affordable route to Lean Six
Sigma Training and Certification

LEAN SIX SIGMA

**LEAN SIX SIGMA
MASTER BLACK BELT**



**CLASSROOM
TRAINING**

WHO WE ARE



At CBIS, we offer classroom training for Lean Six Sigma Yellow Belt, Green Belt and Black Belt courses under accreditation of International Association for Six Sigma Certification (IASSC) and the Council for Six Sigma Certification. We are also Exemplar Global Certified TPECS Provider for the various Lean, Six Sigma, Lean & Six Sigma training courses from introductory to advanced level in compliance with ISO 18404:2015 international standard.

Here is a handful of our clients:



COURSE OVERVIEW



This Lean Six Sigma Master Black Belt course prepares participants to perform the role of a Lean Six Sigma Master Black Belt. The Lean Six Sigma Master Black Belt training materials comprise a comprehensive curriculum covering everything within the Lean Six Sigma Body of Knowledge required to successfully complete Master Black Belt certification. After achieving this qualification, Master Black Belts utilise the extensive acquired DMAIC methodology and the advanced tools during the execution of a project as a coach and consultant, as well as coach and mentor a team of Green Belts and Black Belts.

DURATION



15 Full days – 9 am to 5 pm

CERTIFICATION



After passing the knowledge exam and successful completion of the Lean Six Sigma Master Black Belt Project Portfolio within 6 months, participants will be certified as Lean Six Sigma Master Black Belt.

The certificate will be granted under Exemplar Global banner according to ISO 18404 international standard and includes the project title.

TARGET AUDIENCE



The Lean Six Sigma Master Black Belt certification program is perfect for participants with limited or no exposure to Lean Six Sigma who want to achieve their Lean Six Sigma Master Black Belt Certificate without achieving Yellow Belt, Green Belt and Black Belt Certificates. The Lean Six Sigma Black Belt Body of Knowledge is covered in the first 10-days with the additional topics covered in the remaining 5-days for upgrading to Lean Six Sigma Master Black Belt.

WHAT IS INCLUDED



- ✓ Pre-course On-line Introduction Video
- ✓ Master Black Belt Course Material (Hard Copy)
- ✓ Minitab Exercises Manual (Hard Copy)
- ✓ Data files for Minitab practices
- ✓ One-month Minitab exercise support
- ✓ Master Black Belt project templates pack to be used for the Lean Six Sigma Project
- ✓ Master Black Belt practice test
- ✓ Master Black Belt Certification Exam
- ✓ Master Black Belt Project Portfolio
- ✓ Six months project support service

PREREQUISITES



As all Lean Six Sigma Master Belt topics are covered during the course, there is no formal prerequisite for the Lean Six Sigma Master Black Belt Certification. Advanced numeracy and statistical knowledge is required.

COURSE OUTLINE



Introduction to Lean Six Sigma

- What is Lean
- Lean Principles
- Evolution of Lean
- Eight Types of Waste (MUDA)
- Waste and Value
- What is Six Sigma?
- Six Sigma History
- DMAIC Vs. DMADV
- Lean Six Sigma (LSS)
- Similarities of Lean and Six Sigma
- Differences of Lean and Six Sigma
- LSS Tools Overview
- Limitations to LSS projects

Define Phase

- Team, Teamworking, Team Building, Team roles and responsibilities
- Creative Thinking and Brainstorming
- Generating Project Ideas
- Balanced Scorecard (BSC)
- Hoshin Planning
- Affinity Diagram
- Project Selection Matrix
- Stakeholders Analysis
- Project Risk Assessment
- Project Planning / Project Management
- Communication Skills and Communication Planning
- Project Charter
- Project Measures (Metrics) Incl. Yield, RTY, DPO, DPMO, ...
- Cost of Poor Quality (COPQ)
- LSS and Cost
- Process Definition
- SIPOC
- Voice of Customer (VOC)
- Critical to Quality (CTQ)
- Quality Function Deployment (QFD)

Measure Phase

- C&E (Fishbone) Diagram
- Pareto Chart
- C&E Matrix (X-Y Diagram)
- FMEA
- Different types of Data
- Inferential and descriptive statistics
- Destructive Measurement Systems
- Statistical Measures (Mean, Median, Mode, Range, Variance, Standard Deviation, Skewness, Kurtosis)
- Different Types of Variation
- Histogram



- Population and Sampling
- Sample Size Calculation
- Stratification
- Data Collection Plan
- Measurement System Analysis (MSA)
- Accuracy and Precision
- Bias
- Linearity
- Stability
- Repeatability & Reproducibility (G R&R)
- Attribute MSA (KAPPA)
- Normal Distribution and Normality
- Data Transformation, Box Cox, Johnson
- Run Chart
- Individual Control Chart
- Discrete Statistical Distributions (Binomial, Poisson)
- Normal and standardised normal distributions
- Central Limit Theorem
- Process Capability Indices (Cp, Cpk, Pp, Ppk)
- Short Term and Long Term Sigma Level

Analyse Phase

- Process Mapping Tools
- SIPOC, Spaghetti Diagram, Process Flow Chart, etc.
- Theory of Constraints (TOC)
- Value and Non-value Add Analysis
- Value Stream Map (VSM) - Current State
- Graphical Cause Validation Tools (Fishbone Diagram, 5 Whys, ...)
- Statistical Cause Validation Tools
- Box Plot, Dot Plot, Main Effect Plot, Multi-vari Chart
- Hypothesis Test
- Chi-square Test
- Scatter Plot and Correlation
- Simple Linear Regression
- Non-Linear Regression
- Multiple Linear Regression
- Logistic Regression

Improve Phase

- Improvement Strategy
- Kaizen
- 5S (Sort, Set in order, Shine, Standardise, Sustain)
- Poka Yoke (Mistake Proofing)
- Just-In-Time (JIT)
- Pull and Push Systems
- Kanban
- Batch Flow and Single Piece Flow
- Standardised Work
- Layout Planning
- Total Productive Maintenance (TPM)
- Overall Equipment Effectiveness (OEE)
- Single Minutes Exchange of Die (SMED)
- Value Stream Map (VSM) - Future State
- Design of Experiment (DOE)
- Advanced DOE (Taguchi Designs, ...)
- Cost-Benefit Analysis
- Improvement Solution Selection
- Resistance Management and Force Field Analysis
- Change Management
- Motivation and Motivating Others
- Project Pilot
- Project Planning



Control Phase

- Standardisation
- Control Plan
- Documentation
- Training
- Training Design and Delivery
- Self-Review and Self Development
- Individual and organisational changes
- Coaching
- Visual Control
- Statistical Process Control
- Variable Control Charts (Xbar-R, Xbar-S, ...)
- Attribute Control Charts (C chart, P chart, ...)
- Advanced Control Charts (EWMA, CUSUM,...)
- Before and After Analysis
- Presentation and Report Writing Skills
- Project Closure
- Additional Topics
 - Design For Six Sigma (DFSS)
 - 8D
 - A3 Report
 - Business Excellency Models

CONTACT US



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