



**INDIAN STATISTICAL INSTITUTE**  
**SQC&OR UNIT, PUNE**  
**www.sqcpune.org**  
**SIX SIGMA MASTER BLACK-BELT CERTIFICATION PROGRAM**  
**FOR 12 DAYS OF CLASS ROOM SESSION DURING 2-7 & 9-14 MAR-20**



It is a unique institution, devoted to the research, teaching & application of not only statistics and allied sciences, but also the natural sciences, social sciences and their interface with the statistics. Founded by Prof. P. C. Mahalanobis, a Physicist turned Statistician; the Institute has been accorded the status of an INSTITUTE OF NATIONAL IMPORTANCE, by an Act of Parliament, 1959.

Six Sigma Master Black-belt is a 12 days class-room program spread over 2 weeks. Practicing Six Sigma Black-Belts having completed 3 Six Sigma projects would be eligible to enrol for this Program. Exposure to Master Black-Belt Program would make the participants capable to deploy Six Sigma to any Organisation as effective mentor. An MBB would be able to effectively train and coach at all levels including Leadership team, Sponsor, Champion, Black-Belt, Green-Belt and Yellow Belts on all the related disciplines viz. DMAIC, Lean Six Sigma, Design for Six Sigma and Business Analytic using Data Mining. Our MBB would be able to act as RAJGURU to any Organisation to enable sustainable, predictable and desirable growth in profit following the laws of the lands.

**Who can enrol?**

The program is only for those Certified Six Sigma Black-Belts who have completed at least three Six Sigma Black-Belt level Projects.

**Certification Requirements:**

Six Sigma Master Black-belt Certificate will be issued after successful completion of Content Test and a Test of Presentation skill with  $\geq 80\%$  marks in the test conducted on the last day of the session.

We also issue an MBB ID card to the MBB once he mentored at least five Six Sigma Black-Belt level projects and complete at least 100 hours of training session within one year from the date of issue of MBB Certificate.

## Course Content

### Topics

#### Introduction

### Content

Vision & Mission, HosinKanri, SWOT, Balance Scorecard, Business level dashboard Annual Business Plan (ABP), Strategic Business Plan (SBP), Multigenerational Process (MGP) and MGAP (Multi generation annual plan), Six Sigma linked to business benefit, Six Sigma Deployment Strategies- Business Process Management Systems, DMAIC, Lean Six Sigma and DFSS Organisation for Six Sigma, Role clarity and certification requirements, Project hopper Project selection methodologies Change Acceleration Process

#### Refreshing DMAIC

Project Hopper, Project Charter, Voice of Customer, Critical to Quality, Tree Diagram, Pareto, SIPOC  
Type of Data, Measurement System Analysis – Variable & Attribute, R&R Study, Sampling, Base level Assessment, Normality tests, Capability analysis – Cp, Cpk Pp, Ppk, Defect & defective, DPMO, DPO, DPU, Sigma Level Process Analysis – Basic Flow Chart, Activity & Deployment flow chart, Opportunity Flow Chart. Problem Analysis, Sporadic Problems, Chronic Problems, Unstable Process, Control Charts, Test of Hypothesis, Tabular Analysis, Chi – Square test, Regression Analysis, Process FMEA, Real cause identification TRIZ, Solution Prioritization matrix, Solution Matrix, RICl – Chart, Before After tests, Solution Implementation, Design of Experiments - Taguchi, ANOVA Control Plan, Control Charts for Online Analysis, Mistake Proofing, Kaizen Philosophy, Overall Review, Evaluation Test

#### Lean Six Sigma

Define Phase:  
Project charter, VSM- CS  
Measure Phase:  
Waste related CTQs, Spaghetti chart, Routing card  
Analyse Phase:  
Seven Point Waste  
Improve Phase:  
VSM-FS, Kaizen- Takt time, Heijunka box, Pull- JIT, 5-S, SMED, ANDON, Poka Yoke, Jidokha, Super market, Suggestion system, TPM  
Control Phase:  
Report-out

## DFSS

- Define Phase

Project charter  
MGP-MGAP  
Conjoint analysis  
Contextual enquiry  
ECTQ Dashboard

- Measure Phase:

QFD  
Design scorecard

- Analyse Phase:

Transfer functions  
Simulation  
DFX  
Axiomatic design

TRIZ

Pugh Matrix  
Fault tree analysis  
Reliability analysis

FMEAs

Tolerance design

- Design Phase:

Design competencies  
Design components- Design configurations  
P-R Map  
Control plans

- Verify Phase:

ECTQ Dashboard  
Control plans

## Business Analytic using Data Mining

Introduction to Business Analytic using Data Mining  
Data Preparation  
Outlier Analysis  
Data Normalisation  
Data Dimension Reduction (Principal Factor Analysis & FA)  
Data Visualisation  
Classification (Logistic regression, Decision tree, CART)  
Clustering concept  
Affinity analysis (Market basket Analysis concept)  
Predictive analytic including Time series forecasting

## Examination

Theory Session  
Presentation Session

**Schedule:**

12 Day Program: **2-7 & 9-14 MAR-20** 9:30 am to 5:30 pm

**Location/ Venue:**

Indian Statistical Institute,  
B-9, 3<sup>rd</sup> Floor,  
Anandvan Co-op. Hsg. Soc.,  
Survey Number 36, Kothrud,  
Pune 411 038.

**Course Fee**

**INR 60,000/-** per participant. (plus, applicable GST @18% i.e., INR 10,800) Totalling to INR70,800/-. Participant would have to pay by cheque favouring INDIAN STATISTICAL INSTITUTE, payable at Pune.

**Mode of Payment:**

- Drawing a Cheque/DD in favour of **"Indian Statistical Institute" payable at Pune**
- For RTGS or NEFT: **Current account number 11138205207 with State Bank of India, Erandavana Branch; IFSC No. SBIN0004618.**

**Note :**

1. The above fee is also inclusive of Course Material, Breakfast, Lunch and Refreshments.
2. For registration procedure please refer to the registration form available at <http://www.sqcpune.org/training-programs/training-calendar> or email us for the same

**Contact Details**

Website: [www.sqcpune.org](http://www.sqcpune.org)

Email: [srath02@yahoo.com](mailto:srath02@yahoo.com)

Mobile: 09371058816 (Prof. Subrata Rath)/ 09960956118 (Mr. Sharad S. Shende)

