



**INDIAN STATISTICAL INSTITUTE  
SQC & OR Unit  
Bangalore**



*Announces*

**Certification Program  
for  
SIX SIGMA MASTER BLACK BELT  
(MBB-32 Batch)**

**11<sup>th</sup> to 25<sup>th</sup> January, 2020**



**Indian Statistical Institute,  
8<sup>th</sup> Mile, Mysore Road,  
Bangalore - 560 059, INDIA**

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## **EXPECTATIONS !**

Six Sigma is like that old Wella Balsam shampoo commercial: 'She told two friends, and they told two friends,' and so on....As Black Belt project leaders multiply and train more people, and those people get involved in projects, the financial impact is exponential, in our view."

Writes Jennifer Pokrzywinski, an analyst with Morgan Stanley, Dean Witter, Discover & Co. (Report on Business Magazine, October 1997)

- **Six Sigma** initiative has become a rage. Every organization wants to implement Six Sigma approach in anticipation of improving market penetration and organizational speed at the same time reducing cost of doing business.
- **Six Sigma** is being perceived to take people to higher level of performance with fewer mistakes while making it a strategic option for transforming an organization.
- **Six Sigma** is a Program to be owned and led by leadership orienting strategically towards market place and customer satisfaction.
- **Six Sigma** is described as a methodology to improve business processes and is supposed to provide metrics that strives for near perfection.
- **Six Sigma** embodies a disciplined, data-driven analytical approach for reducing variation in any process and thereby eliminating defects.

## **BUT WHAT IS HAPPENING**

- Projects remain open much longer than the anticipated 3-6 months, some stuck in an early phase of Six Sigma Life
- Black Belts are unable to get cooperation (from functions and departments) in collecting data, identifying root causes, etc.
- Teams lose focus part of the way through their Projects
- Successes with Projects in one department or function are not reapplied in others
- Managers resist assigning high performers to Black Belt jobs, keeping these performers for "real work" instead
- Managers see 6 Sigma as competing with other improvement initiatives, and are reluctant to participate
- MBBs do not have adequate knowledge on right applicable methodology

## **VENUE AND TIMINGS**

The Sessions\* shall be held at the **Indian Statistical Institute, 8<sup>th</sup> Mile, Mysore Road, Bangalore 560059** (Between the Bangalore University and the RV Engineering College on Mysore Road).

(\*): Sessions timings will be **9:30 to 17:30 hrs (Extendable)** including Classroom Teaching, Project Presentation / Discussions, Teaching Demo by participants, Interactive sessions.

## **FACULTY**

Specialists from Indian Statistical Institute, and Experts from Academics/ Industry.

## **WHO CAN ATTEND**

- **Certified Black Belts from recognized certification bodies**
- **Each candidate should have about 3 years of experience in conducting/guiding improvement projects.**

## **CERTIFICATION CRITERIA**

- **Qualifying certificate** by securing 70% marks in the test conducted on the last day of the course.
- **MBB Card** shall be issued after
  - i) Successful qualification in the test and guiding 5 projects on improvement, **AND**
  - ii)
    - a) Conducting 120 hours of training in related topics, **OR**
    - b) Attending 3 conferences/seminars/workshops on related subjectsin the following **18 months**.



**The Training Sessions shall include Topics like:**

- Overview of Six Sigma Methodology
- Overview of Six Sigma Project execution (DMAIC or DFSS/ DMADV) (Define- Measure- Analyse- Improve & Control, Design for Six Sigma, Define Measure Analyse Design and Validate)
- Project Review Guidelines and selection of Belts for the projects
- Development of Project Team and Charter
- Define and Map Processes to be improved
- Voice of Customer & Quality Function Deployment
- Type of Data, knowledge of Statistical distributions
- Data Collection Planning
- Introduction to software packages for data display & analysis like Minitab, JMP etc.- understanding in usage & interpretation of output
- Measurement System Evaluation for Measurable data (Gauge R&R) as well as for attributes (Kappa Value and Confidence interval for agreement with expert)
- Understanding variation-special causes vs. common causes (like dot plots, box plots, histogram and control charts)
- Stratification methods (like Pareto, Bar Diagrams, stratified dot plot, stratified scatter plot, Box Plot, Multi-Vari Charts etc)
- Normality test of a data, Evaluation of Process Capability for data from a Normal distribution; Concept of confidence interval; Concept of Short Term, Long Term Process Capability and assessment of Sigma level
- Identification of Value-added and Non-value-added activities (use of lean concept) & Value Stream Mapping
- Organizing for potential causes using cause and effect diagram, FMEA & Tree Diagram
- Verification/validation of causes using work place investigation (GEMBA)
- Correlation and simple & multiple regression and use of the same in validating cause
- Estimation & Test of Hypothesis and use of the same in validating the causes
- Logistic regression and use of the same in validating the cause
- Design of experiment and details of full factorial, fractional factorial and screening design
- TRIZ
- Taguchi Methods of Parameter Design and Tolerance Analysis
- Multivariate Analysis like Cluster Analysis, Factor Analysis etc., Multivariate Control Chart, MANOVA
- Conjoint analysis
- Improvement Ideas using Creativity Techniques (Traditional & non traditional)
- Solution Evaluation Criteria, Evaluation of solutions and selection of solutions
- Process of piloting the solutions & Risk Analysis through use of FMEA or related methodologies
- Concept and Examples of Poke Yoke, Visual Workplace & 5S; Planning for full scale implementation (use of Gantt Charts, Planning Grid, Involvement Matrix),
- Evaluation of results after implementation, Monitoring the results through Statistical Process Control after implementation of the solutions, Institutionalisation and integration of the solutions
- Process of Closing the Project
- Work through six sigma projects of different applications
- Group Discussions and Project Presentations

## **PARTICIPATION FEE :**

**INR 80,000/- (for India & SAARC countries) / US\$ 2000 (for others) : Per Head**

*[With tax, this comes to INR 94,400/- / US\$ 2360 - Refer Note # 2 below]*

- NOTE:**
- 1. Participation Fee includes** Course Manual, Lunch & refreshments, and Course Kit.
  - 2. Applicable Tax, presently @18%, TO BE ADDED to the total amount due.**
  - 3. Total fees to be paid in full alongwith the application by a) Demand Draft favouring INDIAN STATISTICAL INSTITUTE payable at Bangalore, OR b) On-line transfer**  
*(Refer to Page 2 of Registration Form for details).*
  - 4. If there is any change in the Govt. taxes, the additional amount to be adjusted.**
  - 5. Seats are limited. Enrolment on First-Come-First-Served basis.**

## **REGISTRATION / ACCOMMODATION :**

Refer to Registration Form for details of application, accommodation and certification.

## **IMPORTANT DATES :**

**Submission of nomination: NOT LATER than 2<sup>nd</sup> January 2020**

## **CONTACT :**

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## **INDIAN STATISTICAL INSTITUTE**

- ❖ The **Indian Statistical Institute** is a quasi central organization under the Ministry of Statistics and Program Implementation.
- ❖ It is declared by an **Act of Parliament** as an **Institute of National Importance**.
- ❖ Over the years the Institute has grown as a multi-disciplinary organization.
- ❖ It functions as a **University** empowered to award degrees up to D.Sc.; as a **Corporation** in undertaking large scale projects; as a **Firm of Consultants** to industries to improve Quality, Reliability and Efficiency and as a **Meeting place** of Scientists, Economists and Literary figures from all parts of the world.
- ❖ For further details, please visit website [www.isibang.ac.in](http://www.isibang.ac.in) / [www.isical.ac.in](http://www.isical.ac.in)

## **Role & Functions of SQC & OR DIVISION**

- ❖ The **pioneer and leader** in blending **statistical theory with practice** and institutionalizing the **continuous improvement process** into a sustaining system.
- ❖ To strengthen **national economy** through continual search for excellence in Quality.
- ❖ To disseminate the basic concepts and **techniques for Quality Improvement** by organizing Training programs, Workshops and In-house programs.
- ❖ To develop **highly skilled professionals** capable of self actualization.
- ❖ To help industries in their efforts to cope up with the growing challenge of global competition through implementation of quality system based on **ISO-9000 series, ISO-14000, TS-16949-2002 standards, Six Sigma & World Class Manufacturing**.
- ❖ To continually develop and improve methodologies through **applied research** efforts to attain International Standards in services provided.
- ❖ To provide **solutions to the problems** pertaining to the entire gamut of complex Business Decision Processes with the aid of **Statistics and Operations Research**.