



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



*Announces*

***Certification Program***  
***for***  
***SIX SIGMA BLACK BELT***  
***(BB-12 Batch)***

**16<sup>th</sup> – 22<sup>nd</sup> January; & 12<sup>th</sup> – 20<sup>th</sup> March, 2012**



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## EXPECTATIONS !!!

### **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 Six Sigma as competing with other improvement initiatives, and are reluctant to participate**
- **BBs do not have adequate knowledge on right applicable methodology**

## VENUE AND TIMINGS:

The Sessions shall be held **09.30 hrs to 18.00 hrs every day,**  
in two phases: **a) 16<sup>th</sup> – 22<sup>nd</sup> January, and b) 12<sup>th</sup> – 20<sup>th</sup> March; 2012**  
at the **Indian Statistical Institute; 8<sup>th</sup> Mile, Mysore Road, Bangalore 560 059**  
(Between the Bangalore University and the RV Engineering College on Mysore Road).

## WHO CAN ATTEND:

- **Degree holder in any discipline with at least 6 months of specialized training in Quality Management Sciences from a recognized institutions like ISI etc.**  
**and/or**
- **Certified Green belts from recognized certification bodies like ISI, ASQ etc.**
- **Each candidate should have at least 3 years of experience in conducting/guiding improvement projects.**

## **THE TRAINING SESSION SHALL INCLUDE TOPICS LIKE:**

***Overview of Six Sigma Methodology, Identification, Prioritization and selection of Improvement opportunities, Roles and responsibilities in Six Sigma implementation.***

***Over view of Six Sigma Project execution (DMAIC or DFSS/ DMADV) (Define- Measure-Analyze- Improve & Control or Design for Six Sigma/Define- Measure- Analyze- Design and Validate), and Gate Review Questionnaire.***

***Development of Project Team and Charter, Define and Map Processes to be improved (SIPOC -Supplier, Input, Process, Output, Customer), Identification of Critical To Customer / Critical To Business (CTQ/CTB) characteristics, Concept of tree diagram, Voice of Customer, Concept of Quality Function Deployment.***

***Types of Data, Statistical distributions - Binomial, Poisson, Normal, Exponential and Weibull; Prioritization Matrix, FMEA and their use in Data Collection Planning.***

***Introduction to various software packages for data display & analysis like Excel, Minitab, JMP etc.- understanding in usage & interpretation of output along with each topic, Measurement System Evaluation for measurable (Gauge R&R) as well as for attribute data (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, and concept of confidence interval; Evaluation of Process Capability for Data, 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), Organizing for potential causes using Cause-&-Effect diagram, FMEA & Tree Diagram; Verification/validation of causes using work place investigation (GEMBA), Concept of correlation and Regression and use of the same in validating causes; Concept of Test of Hypothesis like 2 Sample t, Chi Square, ANOVA etc and use of the same in validating the causes; Sample Size determination for a given confidence level; Concept of Multiple Regression and Logistic regression and use of the same in validating the causes; Concepts of Exploratory Data Analysis.***

***Concept of Design of experiment and details of full factorial, fractional factorial and screening designs; Generate Improvement Ideas using Creativity Techniques (Traditional & non traditional)***

***Lean Concepts, including Kaizen, Solution Evaluation Criteria, Evaluation of solutions and selection of solutions, Change Management Process dealing with resistance to change, Process of piloting the solutions, Risk Analysis through use of FMEA or related methodologies, Concept and Examples of Poke Yoke, Visual Workplace,, kaizen and 5S, Planning for full scale implementation (use of Gantt Charts, Microsoft project, planning grid, involvement Matrix) Simulation, Business forecasting.***

***Evaluation of results after implementation, Monitoring the results through statistical Process Control (like Control Charts, Pre-Control Charts etc) after implementation of the solutions, Monitoring the results as a part of established QMS through use of process audit, product audit and internal audits, Institutionalization and integration of the solutions, Process of Closing the Project, Work through at least 3 six sigma projects of different applications, Documentation of a Project.***

**The course will end with a test.**

**Successful candidates must submit one completed Project within 6 months from the end of classroom training for certification.**

## PARTICIPATION FEE

**INR 70,000/- (for Indians) / US\$ 2000 (for Overseas participant ) per head**

### **Note:**

1. Participation Fee includes Course Manual, Lunch & Refreshments, and Course Kit. Participants staying at the Institute Guest house will be provided accommodation on twin-sharing basis for all days, breakfast, morning and evening tea/coffee, and Indian dinner.
2. Discount for a) Member Organizations and b) Self-sponsoring participants:  
INR 5,000/- (Or US\$ 125) per participant
3. Discount for Participants NOT staying in Guest House : INR 5,000/- (Or US\$ 125)
4. Discount for Group Participation for organizations (3 or more participants from the same Orgn.)  
: 10% on total
5. Applicable Service Tax, presently 10.3%, TO BE ADDED to the total amount due.
6. Total fees to be paid in full along with the application by Demand Draft favoring INDIAN STATISTICAL INSTITUTE payable at Bangalore.
7. Seats are limited. Enrolment on First-Come-First-Served basis.

## IMPORTANT DATES

Submission of nomination: NOT LATER THAN **6<sup>th</sup> January 2012**

## 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 Ph.D.; 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 / www.isical.ac.in**

### Role & Function 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**.