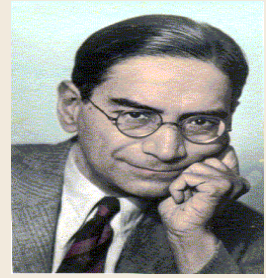




# Indian Statistical Institute

SQC & OR Unit, Hyderabad



Announces

Certification Program on

## Six Sigma Black Belt

Last Date for Registration

**11<sup>th</sup> Feb 2020**

**On Saturdays & Sundays (Weekend)**

(22, 23, 29 Feb & 1, 7, 8, 14, 15, 21 and 22 March 2020)

**10 Days**

Program Director - G Murali Rao

Street No 8, Habsiguda, Hyderabad - 500007

Phone: (040) 27153984/2171906, 8919330084

Website: [www.isihyd.ac.in](http://www.isihyd.ac.in)

Email: [cssbbisihyd@gmail.com](mailto:cssbbisihyd@gmail.com)

Note : Any changes/cancellation of the program offering will be at the discretion of the Institute and will be intimated accordingly.

## **Introduction**

Indian Statistical Institute, Hyderabad announces a certification program for "Six Sigma Black Belt" with specific emphasis on understanding the DMAIC methodology, developing skills in statistical tools & techniques and demonstrating the skills through successful execution of an improvement project. The certification program is planned on weekends for 10 days during February-March 2020. The program will be extremely useful to the executives associated with quality & related functions to introduce breakthrough improvements by building a strong Six Sigma resource & structure with the needed expertise in problem solving and statistical methods for achieving business excellence.

## **Six Sigma Black Belt (SSBB)**

Six Sigma Black Belts (SSBBs) are developed through a structured training in the DMAIC methodology and statistical tools and techniques from a practical and application prospective. Fundamental premise of Six Sigma is to perceive a business from a customer's prospective and achieving a breakthrough reduction in variation. The six sigma skills so acquired along with their domain expertise they play the critical role of improvement drivers of any organization by striving to implement six sigma. They are the catalysts or change agents bringing in innovative ideas/solutions for improving the efficiency of an organization and striving towards continual customer satisfaction.

They bring in a paradigm shift in the way the business issues/problems are addressed by using numbers and data to arrive at any decision. They also acquire the necessary skills to teach the Six Sigma methodology across the organization. Now-a-days each and every individual in an organisation or institution irrespective of the function in which he/she is working is expected to possess the necessary six sigma skills through certification to achieve optimal results in their profession as well as career. Six Sigma along with Statistical Thinking is gradually becoming as necessary as the ability to perform one basic professional work.

## **Eligibility Criteria**

Degree/Diploma holders in any discipline having Six Sigma Green Belt certification from any reputed Institution /Organization/Certification body. Experience in executing quality/productivity improvement projects will be an added advantage and will be preferred.

## Certification Criteria

### Certificate of Participation

- Minimum 75% attendance and at least 70% Marks in the test (to be conducted on 22<sup>nd</sup> March 2020)

### Six Sigma Black Belt Certificate:

- Submitting at least **ONE** Six Sigma Improvement Project (Executive Summary & Presentation Slides in the prescribed format) **within 6 months of receiving the participation certificate** for evaluation and acceptance by the Institute.

**Faculty : Senior Faculty members of the Institute with over 30 years of experience and also guest faculty from Industry**

**Program Fee :Rs 45,000/- (per participant) In addition GST @18% need to be paid on the Program fee.  
(Total Fee - Rs 53,100/-)**

### Payment Mode

Participants need to pay the fee along with the applicable taxes in full at the beginning of the program in the form of **Demand Draft drawn in favour of Indian Statistical Institute, Payable at Hyderabad** OR **Online Bank Transfer**

#### Online Transfer Details :

Name of the Accountholder : Indian Statistical Institute  
Bank Address - Syndicate Bank, J S N Colony, Habsiguda, Hyderabad.  
Current Account No : 30451010000079                      IFSC Code : SYNB0003045

Venue : Lecture Hall, Indian Statistical Institute, Hyderabad Timings : 0930 to 1730

Duration (10 Days) : 22, 23, 29 February & 1, 7, 8, 14, 15, 21 and 22 March 2020

## Program Structure

The whole program is designed under **FOUR** fundamental skill/knowledge dissemination modes. 1. **Class Room Teaching** 2. **Individual/Group Assignments** 3. **Hands-on/Exercise Sessions/Presentations** 4. **Teaching (by the participants)**. Live as well as simulated Case Studies/Datasets/Published Papers will be used for teaching as well as assignment works. During the two phases the participants need to submit assignments on a regular basis. Statistical Software Minitab will be used for all the analysis activities. The participants are expected to have a good knowledge of Minitab before joining the program.

## Application/Nomination Procedure

Registration Forms need to be sent along with the program fee to the Program Facilitator in the prescribed format. (Registration Forms without the program fee will not be accepted. Program Fee will not be refunded subsequent to confirmation of registration). The proof of eligibility criteria, Copies of (a) Degree/Diploma Certificate (b) Green Belt Certificate need to be attached to the registration form.

Last date Receipt of Registrations Form with Fee

**11<sup>th</sup> February 2020**

**Limited Seats**

(Registration will be on first come first served basis)

For any further details Contact / Mail :

[cssbbisihyd@gmail.com](mailto:cssbbisihyd@gmail.com) or

(040) 27153984 / 27171906, 8919330084

K Venkata Ramana  
Program Facilitator

G Murali Rao  
Program Director

# Six Sigma Black Belt Curriculum

(Indicative but not exhaustive)

Define	Measure	Analyze	Improve	Control
1. Quality Focus	1. Detailed Process Mapping	1. Performance Benchmarking	1. Establishing Cause & Effect Relationships	1. Revisiting the Measurement System for any modifications.
2. Understanding Six Sigma	2. Identification of Performance Variables	2. Simple Problem Solving Tools (Old and New Seven QC Tools)	2. Multiple Regression Analysis	2. Establishing the performance of the improved process.
3. Need for Six Sigma	3. Introduction to Industrial Statistics	3. Detailed Process Mapping and VSM	3. Developing Potential Solutions	3. Establishing Process Standards for Inputs, Process and Outputs
4. Organizing for Six Sigma	4. Data Management	4. Identification of Root Causes	4. Introduction to Design and Analysis of Experiments.	4. Developing a Control Strategy & Plan.
5. The Methodology : DMAIC	5. Basic Statistics - I (Measures of Location & Dispersion)	5. Validation of Root Causes	5. DOE as a scientific tool for Optimal search.	5. Statistical Process Control (SPC).
6. Lean Philosophy & Lean Six Sigma	6. Understanding Variation, Chance & Assignable Causes	6. Basic Statistics - II	6. Basic Designs for conducting Experiments.	6. Process Control Charts for Variables.
7. Six Sigma Projects	7. Product / Process Characterization	7. Introduction to Probability Theory	7. Factorial Experiments	7. Process Control Charts for Attributes.
8. Developing a Business Case	8. Graphical Analysis of Process	8. Probability Distributions, Binomial, Poisson and Normal Distribution.	8. Response Surface Methodology	8. On-line Process Control Mechanisms, plans & Schemes.
9. Voice of the Customer	9. Stability Diagnostics : Normality Testing	9. Graphical Analysis of Cause and Effect Relationship	9. Screening Experiments - Dr. CR Rao's Orthogonal Array Designs	9. Developing a strategy for SPC Implementation.
10. CTQ Drilldown	10. Measurement System Analysis: Gage R & R studies	10. Theory of Sampling & Sampling Distributions	10. Introduction to Taguchi Methods	10. Developing Process Control Documentation.
11. Basic Concepts of Problem Solving & Project Strategy	11. Base line Performance Evaluation	11. Central Limit Theorem	11. Determining the optimal solution	11. Continual Improvements.
12. Project Management : Developing a Project Charter	12. Establishing Process Capability Cp, Cpk, Pp, Ppk,	12. Statistical Estimation Theory	12. Implementation and Piloting of the Optimal Solution.	12. Control Phase Review
13. Overview of Define Phase	13. Establishing Six Sigma Metrics : Sigma level	13. Construction of Confidence Intervals	13. Improve Phase Review	13. Overall Six Sigma Review.
14. Mapping CTQs to Process : SIPOC	14. Measure Phase Review	14. Tests of Hypothesis (TOH) Z, t & F, Chi Square tests.		
15. Value analysis of a Process & Value Stream Mapping		15. Analysis of Variance (ANOVA)		
16. Define Phase Review		16. Simple Regression Analysis		
		17. Analyze Phase Review		

## About the Institute

The Indian Statistical Institute (I.S.I.), founded by Professor Prasanta Chandra Mahalanobis, grew out of the Statistical Laboratory set up by him in the Presidency College in Kolkata in the year 1931. In 1959, in recognition of the role of statistics as a key technology of the modern times and the importance of the Institute in the development and application of statistics, the Parliament of India enacted the Indian Statistical Institute Act, declaring it an Institution of National Importance. The Institute is now considered as one of the foremost centres in the world for training and research in statistics and related sciences. In keeping with this long tradition, the Institute has been engaged in developing statistical theory and methods and their practical applications in various branches of science and technology.

The major objectives of the Institute, as given in its Memorandum, are to promote the study and dissemination of knowledge of statistics, to develop statistical theory and methods, and their use in research and practical applications generally, with special reference to problems of planning of national development and social welfare;

to undertake research in various fields of natural and social sciences with a view to the mutual development of statistics and these sciences;

to provide for, and undertake, the collection of information, investigation, projects and operational research for purposes of planning and the improvement of efficiency of management and production.

The Institute initiated the Quality Movement in India as early as 1947. Through its SQC & OR Division the Institute is providing assistance to Indian industry relentlessly since then to achieve high quality and productivity at an affordable cost.

## About the SQC & OR Unit, Hyderabad

The Statistical Quality Control and Operations Research (SQC & OR) Unit at Hyderabad of the Indian Statistical Institute was established in the year 1974 with the objective of helping industries in Andhra Pradesh and also industries of other states close to Hyderabad for promoting and propagating statistical and quality management methodologies.

The SQC & OR Unit, Hyderabad is one of the major Units of the SQC & OR Division of the Indian Statistical Institute. SQC & OR Division was created by Professor Mahalanobis exclusively for helping the Indian industries in managing quality and productivity problems with the application of Statistical as well as Quality Management methodologies.

SQC & OR Unit, Hyderabad has immensely contributed to the SQC & OR Division's activities such as

- Playing a pioneering role in the Quality Movement in India and setting path for quality control and improvement activities for the Indian industries through promotion and applications of statistical and operations research methodologies.
- Serving the industries in India and abroad over the last five decades by providing training and consultancy on quality concepts and methodologies such as TQM, Taguchi Methods, Quality Function Deployment, Six Sigma, and Quality Systems.
- Collaborating and exchanging ideas with quality gurus. Some experts like Shewhart, Deming, Juran, Taguchi, Ishikawa, Ott, Tippet and Suda visited ISI at various points of time and interacted with ISI faculty.

A large number of Manufacturing, Service, IT, BPO & KPO industries have been benefitted by the services of SQC & OR Unit Hyderabad. Reliance, ITC, Wipro, HSBC, BHEL Dr. Reddy's etc. to name a few.

**Indian Statistical Institute, SQC & OR Unit, Hyderabad**

**Certification Program for**

## **Six Sigma Black Belt**

**22, 23, 29 February & 1, 7, 8, 14, 15, 21 and 22 March 2020 (weekend)**

### **Registration Form**

(to be filled separately for each participant)

1. **Name :**

2. **Age:**

**Gender :**

3. **Organisation :**

4. **Highest Qualification :**

5. **Designation/Responsibility :**

6. **Years of Experience :**

7. **Address for Communication**

**Email ID :**

**Mobile :**

8. **Briefly describe about the Improvement Projects (if Any) executed by you**

**Details of Program Fee : Rs 53,100/- including applicable GST**

**Demand Draft/Online transfer details:**

**Number:**

**Bank :**

**Date :**

Date :

Signature