



21st Century Quality Six Sigma Black Belt (5 Day Training)

Six Sigma

Quality in the 21st Century requires in-control processes and disciplined improvement paths. The management approach has to be rigorous, customer-oriented and data-driven in order to meet expectations. Manufacturing typically has access to their processing data, however the real challenge is to use the data for assessing process control statistically and identifying opportunities for improvement. Six Sigma can help do just that.

Workshop Overview

The workshop is designed and delivered by personnel with expertise in 21st Century Quality and in the Six Sigma methodology; the Black Belt Training provides the participants in-depth understanding of tools and methods in the Six Sigma body of knowledge and their application in a manufacturing environment and lead complex Six Sigma projects and teams with a focus on strategic impact

Numerous improvement projects in areas such as **Process Capability, Right First Time, Lot Rejection Rate, Lab Events** etc. have been successfully completed in these workshops. Application to **Product Life Cycle** and **Analytical Life Cycle** and **Continuous Process Verification** are also part of the workshop.

This 5-day program provides an opportunity for participants to apply the tools and methods to projects in their own business. A Six Sigma Coach provides mentoring on these projects. If participants do not have projects of their own, then anonymized representative projects can be provided.

Workshop Objective and Deliverables

The most appropriate tools and techniques used by the Six Sigma community have been incorporated. The training is highly contextual and experiential and extensively uses examples. This workshop will help participants:

- Apply the DMAIC methodology to their industry and projects.
- Lead a Six Sigma improvement team to solve performance problems by use of a structured, disciplined problem-solving approach.

The Trainer

MKV Saikumar is a Principal Consultant with 34 years of experience in quality management. Saikumar has been a certified Six Sigma Master Black Belt from the Indian Statistical Institute for the past 15 years. Saikumar has mentored over 700 six sigma projects and provided training to many Fortune 500 (and smaller) companies.

Who should attend

- Experienced Six Sigma Professionals with Green Belt Certification
- Process Improvement Experts, Project Leaders
- Professionals aiming to lead large scale Six Sigma Projects
- Business / Operational / Process Excellence Leaders
- Functional Managers (any function, including support functions)

Workshop Contents

| SIX SIGMA BLACK BELT | | | | |
|---|---|---|---|--|
| DAY 1 | DAY 2 | DAY 3 | DAY 4 | DAY 5 |
| INTRODUCTION TO LEAN SIX SIGMA | SAMPLING - TERMINOLOGY, SAMPLING TECHNIQUES, SAMPLE SIZE (DISCRETE & CONTINUOUS) | CAPABILITY INDICES - Cp, Cpk, Pp, Ppk | HYPOTHESIS TESTING - STEPS, TESTS, METHODS | DESIGN OF EXPERIMENTS - FULL FACTORIAL, FRACTIONAL FACTORIAL |
| IDENTIFICATION OF PROJECTS - PROJECT SELECTION CRITERIA | MEASUREMENT SYSTEM ANALYSIS - GRR STUDY - ATTRIBUTE & VARIABLE | PROCESS ANALYSIS - PROCESS MAPPING, TYPES OF PROCESS MAP (LEVEL 1,2,3..) | DISCRETE - COUNTS , PROPORTIONS | PILOT & ROLL OUT OF SOLUTIONS |
| CTQ PRIORITIZATION - KANO MODEL, EFFORT BENEFIT MATRIX, | DATA GRAPHICAL REPRESENTATION - HISTOGRAM, BOX PLOT, DOT PLOT, PROBABILITY PLOT | IDENTIFICATION OF CAUSES- CAUSE AND EFFECT DIAGRAM | CONTINUOUS - MEAN , VARIANCE, MEDIANS (PARAMETRIC AND NON-PARAMETRIC) | CONTROL CHARTS (DISCRETE - DEFECTS & DEFECTIVES, CONTINUOUS - INDIVIDUAL, SUB-GROUPS) |
| PROJECT CHARTER - BUSINESS CASE, PROBLEM STATEMENT, GOAL STATEMENT, SCOPE, MILESTONES, PROJECT PLAN, | PROCESS CAPABILITY - DISCRETE (DPMO) & CONTINUOUS | PRIORITIZATION OF CAUSES - PARETO CHART, CONTROL IMPACT MATRIX, CAUSE & EFFECT MATRIX | IDENTIFICATION OF SOLUTIONS | CONTROL PLAN |
| BASIC STATISTICS - DATA TYPES, DATA DESCRIPTION (NUMERIC & GRAPHICAL), CONCEPT OF ACCURACY & PRECISION) | PROCESS CAPABILITY - CONTINUOUS (NORMAL & NON-NORMAL METHOD) | CORRELATION | PRIORITIZATION OF SOLUTIONS - EFFORT BENEFIT MATRIX | PROJECT DOCUMENTATION & PROJECT CLOSURE |
| DATA COLLECTION PLAN - $Y = f(x)$ | OVERVIEW TO PROBABILITY DISTRIBUTIONS , NORMAL DISTRIBUTION | REGRESSION - SIMPLE LINEAR, MULTIPLE LINEAR | RISK IDENTIFICATION - FMEA | |
| DEFINE / MEASURE | MEASURE | MEASURE / ANALYZE | ANALYZE / IMPROVE | IMPROVE / CONTROL |

Workshop Methodology

Methodology

- In-person Classroom / Online Instructor Led
- Case studies
- Class exercises

What you get from the class

- Courseware - Hard Copy
- Case Studies and Data Sheets (excel) - Soft Copy
- Sample Black Belt Assessments - Hard Copy

What do you bring to the class

- Laptop (with MS office)

Black Belt Certification Criteria

- Attend 5 Days Black Belt Training
- Pass the Assessment with 80% score.
- Complete 2 Improvement project (within 9 months of Assessment).