



**SIX SIGMA  
YELLOW BELT PROGRAM**



# YELLOW BELT

## CERTIFIED SIX SIGMA YELLOW BELT

Certified Six Sigma Yellow Belt is one level below Certified Green Belt. The course is designed with broad knowledge of Six Sigma improvement methodology along with concepts, tools & techniques broadly applied with Six Sigma framework. The program is loaded with examples, & case studies from Service, manufacturing and other industries.

### Who Should attend?

Final year Students  
Fresh Graduates  
New joiners to the Company  
Shop Floor Operators,  
Supervisors, & Engineers

### Duration & Takeaway

The program is spread across 2 full days of training. Participant registered for this program will get Training Manual(Hard Copy).

### Examination Criteria

Duration: 2 hr  
Total Questions: 100  
Type: Objective type, Multiple choice & Closed book Examination.  
Certification Criteria: Participant should have successfully cleared the certification exam.

### Benefits

- Exposure to world class practices followed in the industry.
- Participant will be able to apply the concepts learnt in his/her final year project.
- Program facilitators are experienced and qualified consultants from the industry, and brings insights from the industry practices.
- This certification will add value to participant's current academic knowledge, and and provide him/her with better career prospects, as this certification is widely recognized in the industry today and preferred for all entry level positions.

# PROGRAM CONTENTS

## Syllabus

Syllabus, described for this program is it is divided in 6 levels of Complexity,

*Memorize:* Remember terms, definitions, facts, ideas, patterns etc.

*Comprehension:* Comprehend descriptions, reports, tables, diagrams etc.

*Practice:* When to use which tools, ideas, methods, formulae, principles, constituents etc.

*Analyze:* Decipher the information and draw relationships between its constituents, Identify factors influencing constituents etc.

*Appraise:* Evaluate ideas and conclude about the values or the proposed solutions or ideas.

*Construct:* Combine all parts to reveal a pattern or a structure to draw a conclusion.

## I. SIX SIGMA & LEAN - OVERVIEW & PHILOSOPHY

(20 QUESTIONS)

### Six Sigma Overview & Philosophy

Evolution of Six Sigma (Comprehension), Definition of Six Sigma (Comprehension), Recognize why organization use Six Sigma and how they apply its philosophy and Goals (Comprehension), Contribution to the field of quality made by Juran, Deming, Shewart, Philip Crosby, Ishikawa, Taguchi Etc. (Comprehension)

### Lean Overview & Philosophy

Describe Principles of Lean. (Comprehension), Value-added and Non value-added activities, Identify waste in terms of excess inventory, space, test inspection, rework, transportation storage etc. and reduce cycle time to improve, throughput. (Comprehension)

## II. SIX SIGMA APPROACH - DEFINE

(20 QUESTIONS)

# PROGRAM CONTENTS

### Process Management Basics

Define and Describe process components. Recognize how processes cross various functional areas and the challenge that results for process improvement efforts. (Analyze)

Identify Process owners, Internal and External customers and other stakeholders in the project (Practice)

### Project Management Basics

Define Project and Project Management. (Comprehension)

Understand various components of project charter. (Practice)

Define and describe elements of project charter and develop a problem statement, including baseline and improvement Goals. (Practice)

### Evaluating Project results

Cost of Poor Quality (Analyze), Apply project metrics e.g.

DPU, DPO, DPMO and associated sigma levels. (Analyze)

First pass Yield and Rolled throughput Yield concepts. (Analyze)

### Team Management Basics

Define and Describe the stages of Team evolution. Identify and help resolve negative dynamics such as overbearing Dominant, or reluctant participants, unquestioned acceptance of opinions as facts, Group think, Feuding, Floundering, the rush to accomplishment, attribution, discounts, Plops, digressions, tangents etc. (Comprehension)

Define and apply team tools such as Brainstorming, nominal group technique, Multi-voting etc. (Practice)

## III. SIX SIGMA APPROACH - MEASURE (20 QUESTIONS)

### Document and Analyze Process

Develop and review process maps, written procedures, work instructions, flowcharts etc. (Analyze)

Identify process inputs variables and process output variables (SIPOC) and document their relationships through cause and effect diagrams, relational matrices. (Analyze)

### Fundamental Concepts of Statistics

Identify and classify continuous (variables) and discrete (attributes) data. (Analyze)

Describe and Apply 7 QC Tools. (Analyze)

## **Collect & Summarize Data**

Applications of 7 QC Tools pertinent to Measure Phase.

(Comprehension)

Define and apply techniques such as random sampling, stratified sampling sample homogeneity, etc. (Practice)

Define, Compute and interpret measures of dispersion and Central Tendency, and construct and interpret frequency distributions and cumulative frequency distributions. (Analyze)

## **Analyze Process Capability**

Define, Select, calculate  $C_p$  and  $C_{pK}$  and assess process capability.(Appraise) Process Capability analysis for attribute data (Comprehension)

## **IV. SIX SIGMA APPROACH - ANALYZE (20 QUESTIONS)**

### **Statistical Data Analysis**

Applications of 7QC tools as pertinent to Analyze Phase.

(Comprehension)

Analyzing improvement opportunities with Lean Tools.

(Comprehension)

Understand and Apply mistake proofing concepts. (Practice)

## **V. SIX SIGMA APPROACH - IMPROVE (20 QUESTIONS)**

### **Design of Experiments**

Planning and launching Kaizen events. (Comprehension)

Preparing planning implementations/ pilot runs (Practice)

Define and describe basic DOE terms such as independent and dependent variables, factors, and levels, response treatment, error, and replication.(Comprehension)

Design, Run, and interpret - OFAT (One factor at a time experiment) (Practice)

## **VI. SIX SIGMA APPROACH - CONTROL (20 QUESTIONS)**

### **Evaluating change & Establishing Control Plans to sustain gains**

Describe the objectives and benefits of SPC, including controlling process performance, identifying special and common causes, etc. (Analyze) Define and describe how rational sub grouping is used. (Comprehension)

Selection and application of control charts - Identify, Select, Construct and apply the following types of Control charts: X bar R, X bar S, individual and moving range (ImR/ Xmr), median, P, np, c, and u. (Practice)

Analysis of Control Charts- Interpret control charts, common & special causes using rules for determining statistical control. (Analyze), Control plan (Practice)

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