GREEN BELT CERTIFICATION
for
Students, Executives, Managers

6 Sigma Institute

Know What Counts, Measure What Matters, Delivers Results

Green Belt Project

If you complete a project in next one year you will get an additional certificate for completion of project.

Free Project Support

You can get free project from our website www. Forum.6sigmaindia.in   This is a free site allowing you to access to lots of six sigma material.
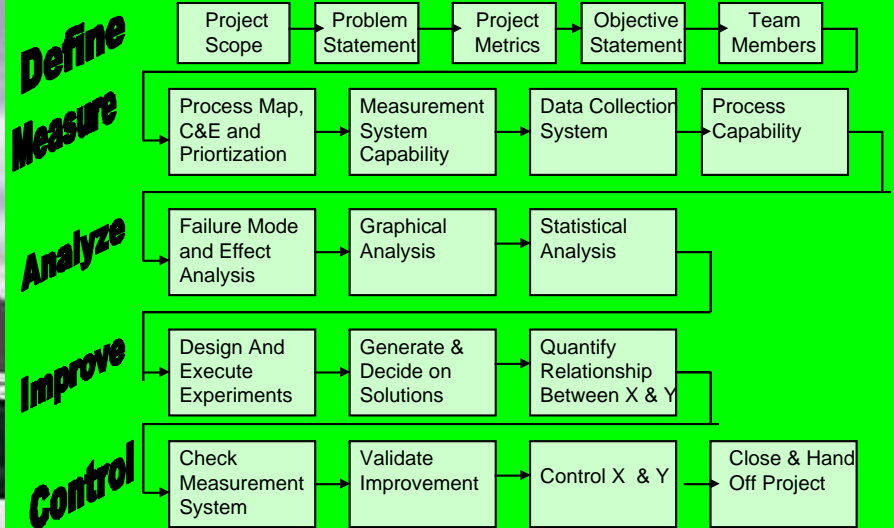
Future Upgrade

We recommend you to upgrade your skills at a convenient and appropriate time (after assimilating Green Belt material) to Lean Certification and Black Belt. As a mater of fact Black Belt has become a core requirement for senior management position in the United States You can download the brochures from our web site www.6sigmaindia.in

Examination

Each certification candidate is required to pass a written examination with at least 70% that consists of multiple choice questions that measure comprehension of the Body of Knowledge..

Program Length: 4 days

Module of Six Sigma

Define

Project Scope	Problem Statement	Project Metrics	Objective Statement	Team Members

Measure

Process Map, C&E and Priortization	Measurement System Capability	Data Collection System	Process Capability

Analyze

Failure Mode and Effect Analysis	Graphical Analysis	Statistical Analysis

Improve

Design And Execute Experiments	Generate & Decide on Solutions	Quantify Relationship Between X & Y

Control

Check Measurement System	Validate Improvement	Control X & Y	Close & Hand Off Project

Becoming a certified as a Green Belt confirms your commitment to quality, and the positive impact it will have on your organization. It helps you advance your career and boosts your organization bottom-line through mastery of quality skills.

Certified Six Sigma Green Belt

❶ Overview: Six Sigma and the Organization

1. **Value of Six Sigma**
   Recognize why organizations use Six Sigma, how they apply its philosophy and goals, and the origins of Six Sigma (Understand)
2. **Organizational drivers and metrics**
   Recognize key drivers for business (profit, market share, customer satisfaction, efficiency, product differentiation) and how key metrics and scorecards are developed and impact the entire organization. (Understand)
3. **Organizational goals and Six Sigma projects**
   Describe the project selection process including knowing when to use Six Sigma improvement methodology (DMAIC) as opposed to other problem-solving tools (understand)
4. **Road maps for DMAIC**
   Describe DMAIC and how they help close the loop on improving the end product/process Understand the continual improvement cycle. (Understand)
5. **Roles & Responsibilities**
   Identify process owners, internal and external customers, and other stakeholders in a project. Describe and define the roles and responsibilities of participants on Six Sigma and other teams, including Black Belt, Master Black Belt, Green Belt, Champion, Steering Committee, team member, process owner, etc. (Apply)

❷ Lean Principals
   5S, Visual Management

❸ Define

1. **Project Charter**
   Define and describe elements of a project charter and develop a problem statement, including baseline and improvement goals. (Apply)
2. **Project scope**
   Assist with the development of project definition/scope using, macro process maps, etc. (Apply)
3. **Project metrics**
   Assist with the development of business, primary, consequential metrics (e.g., quality, cycle time, cost) and establish key project metrics that relate to the voice of the customer. (Apply)
4. **Process inputs and outputs**
   Identify process input variables and process output variables (SIPOC) (Apply)
5. **Translate customer req.**
   Understand the concept of Voice of Customer (VOC), Voice of Business (VOB), from them finding Critical to Quality (CTQ) & further drill down to process metric which needs to be improved. (Understand)

❹ Measure

1. **Techniques for assuring data accuracy and integrity**
   Define and apply techniques such as random sampling, stratified sampling, sample homogeneity, etc. (Apply)
2. **Descriptive statistics**
   Define, compute, and interpret measures of dispersion and central tendency, and construct and interpret frequency distributions and cumulative frequency distributions. (Analyze)
3. **Data collection methods**
   Define and apply methods for collecting data such as check sheets, etc. (Apply)
4. **Collecting and Summarizing Data**
   Sampling size determination for attribute and variable data (Apply)
5. **Types of data and measurement scales**
   Identify and classify continuous (variables) and discrete (attributes) data. (Analyze)
6. **Drawing valid statistical conclusions**
   Distinguish between enumerative (descriptive) and analytical (inferential) studies, and distinguish between a population parameter and a sample statistic. (Apply)
7. **Team tools**
   Define and apply team tools such as brainstorming, multi-voting, etc. (Apply)
8. **Short-term vs. long-term capability**
   Describe the assumptions and conventions that are appropriate when only short-term data are collected. Describe the changes in relationships that occur when long-term data are used, and interpret the relationship between long- and short-term capability as it relates to a 1.5 sigma shift. (Evaluate)
9. **Process capability studies**
   Identify, describe, and apply the elements of designing and conducting process capability studies, Define, select, and calculate Cp and Cpk, and assess process capability. (Evaluate)
10. **Management and Planning Tools**
    Define, select, and use 1) affinity diagrams 2) tree diagrams 3) prioritization matrices, (Apply)
11. **Process performance vs. specification**
    Distinguish between natural process limits and specification limits, and calculate process performance metrics such as percent defective. (Evaluate)
12. **Process performance**
    Calculate process performance metrics such as defects per unit (DPU), rolled throughput yield (RTY), defects per million opportunities (DPMO) sigma levels and process capability indices. (Analyze)
13. **Measurement System Analysis**
    Calculate, analyze, and interpret measurement system capability using repeatability and reproducibility (GR&R) for variable & attribute data, (Evaluate)

❺ Analyze

1. **Hypothesis Testing Basics**
   Define and distinguish between statistical and practical significance and apply tests for significance level, power, type I and type II errors. (Apply).
2. **Tests for means and variances**
   Define, compare, and contrast statistical and practical significance. (Apply)
3. **Paired-comparison tests**
   Define and describe paired-comparison parametric hypothesis tests. (Understand)
4. **Single-factor analysis of variance (ANOVA)**
   Define terms related to one-way ANOVAs and interpret their results and data plots. (Apply)
5. **Chi square**
   Define and interpret chi square and use it to determine statistical significance. (Analyze)
6. **Simple linear correlation and regression**
   Interpret the correlation coefficient, recognize the difference between correlation and causation. Interpret the linear regression equation and determine its statistical significance Use regression models for estimation and prediction. (Evaluate)
7. **Graphical methods**
   Depict relationships by constructing, applying and interpreting diagrams and charts such as dot plot, box-and-whisker plots, run-charts, scatter diagrams, Pareto charts, etc. (Understand)
8. **Failure mode and effects analysis (FMEA)**
   Define and describe failure mode and effects analysis (FMEA). Describe the purpose and use of scale criteria and calculate the risk priority number (RPN). (Analyze)

❻ Improve

1. **Implement and Validate Solutions**
   Use various improvement methods such as brainstorming, main effects analysis, FMEA, measurement system capability re-analysis, and post-improvement capability analysis to identify, implement, and validate solutions through F-test, t-test,

Ⓥ Improve (Continue)

2. **Project planning tools**
   Use project tools such as Gantt charts (apply),

3. **Failure mode and effects analysis (FMEA)**
   Define and describe failure mode and effects analysis (FMEA). Describe the purpose and use of scale criteria and recalculate the risk priority number (RPN). (Analyze)

4. **Design of Experiments (DOE)**
   Define and describe basic DOE terms such as independent and dependent variables, factors and levels, response, treatment, error, repetition, and replication. Interpret main effects and interaction plot (Understand)

5. **Mistake Proofing**
   Understand the concept of Poke Yoke and be able to apply the concept in work environment (Apply)

Ⓥ Control

1. **SPC**
   Describe the objectives and benefits of SPC, including controlling process performance, identifying special and common causes, etc. (Analyze)

2. **Analysis of control charts**
   Interpret control charts and distinguish between common and special causes using rules for determining statistical control. (Analyze)

3. **Selection and application of control charts**
   Identify, select, and apply the following types of control charts: X-R, X-s, individuals and moving range ImR, p, np, c, and u. (Apply)

4. **Control Plan**
   Developing a control plan to document and hold the gains, and assist in implementing controls and monitoring systems. (Apply)

5. **Project Closing**
   All the tasks needed to close the project and preparation of Project Transition Report and Final Report (Apply)

Notes :

Remember (Knowledge Level) Recall or recognize terms, definitions, facts, ideas, materials, patterns, sequences, methods, principles, etc

Understand (Comprehension Level) Read and understand descriptions, communications, reports, tables, diagrams, directions, regulations, etc.

Apply (Application Level) Know when and how to use ideas, procedures, methods, formulas, principles, theories, etc.

Analyze (Analysis Level) Break down information into its constituent parts and recognize their relationship to one another and how they are organized; identify sublevel factors or salient data from a complex scenario.

Registration Process :

Please send the Registration Form in email to enquiry@6sigmaindia.in with name of Participant, Company, Contact Details and Cheque No. Registration fees is as specified in our website. NRI & Foreigners will pay US$400 inclusive of lunch, tea, course material etc. The registration will close 4 days before start of the program or till seats fill up whichever is earlier. The walk in candidates will need to pay regular charges + Rs 1000. The candidates are recommended to bring laptops & we will supply you with evaluation version of the statistical software Upon receiving the payment we will sending you material which you need to go through before attending the session. Cheque should be made payable to "6 Sigma Institute" payable at Delhi. Payment made by any of three means mentioned below:

1. Electronic Fund Transfer IFSC CODE: HSBC0110006HSBC Bank
   Branch: R47 Greater Kailash -1
2. Cheque ,To deposit cheque in HSBC branch with the following details on the reverse side of the cheque. Beneficiary :
   6 Sigma Institute
   A/c No: 094274255001
   Branch: R47 Greater Kailash - 1, New Delhi 110048
   Deposited By: <Your Full Name> and <<Mobile#>>
3. Demand Draft favoring "6 Sigma Institute". DD should be made payable in Delhi. Please post/courier DD to our mailing
   Address:-
   6 Sigma Institute C2 Kailash Colony, First Floor, Greater Kailash-1 New Delhi-48
   Mobile: 09818233237
   Email: enquiry@6sigmaindia.in

Partial List of Customers