UNICHRONE

Lean Six Sigma Black Belt Training and Certification Course

Unichrone

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https://unichrone.com

About Unichrone

We are a professional training institute with an extensive portfolio of professional certification courses. Our training programs are meant for those who want to expand their horizons by acquiring professional certifications across the spectrum. We train small- and medium-sized organizations all around the world, including in USA, Canada, Australia, UK, Ireland and Germany.

Guaranteed Quality

Handpicked Trainers

Global Presence

Online Training Option

We've trained professionals across global companies

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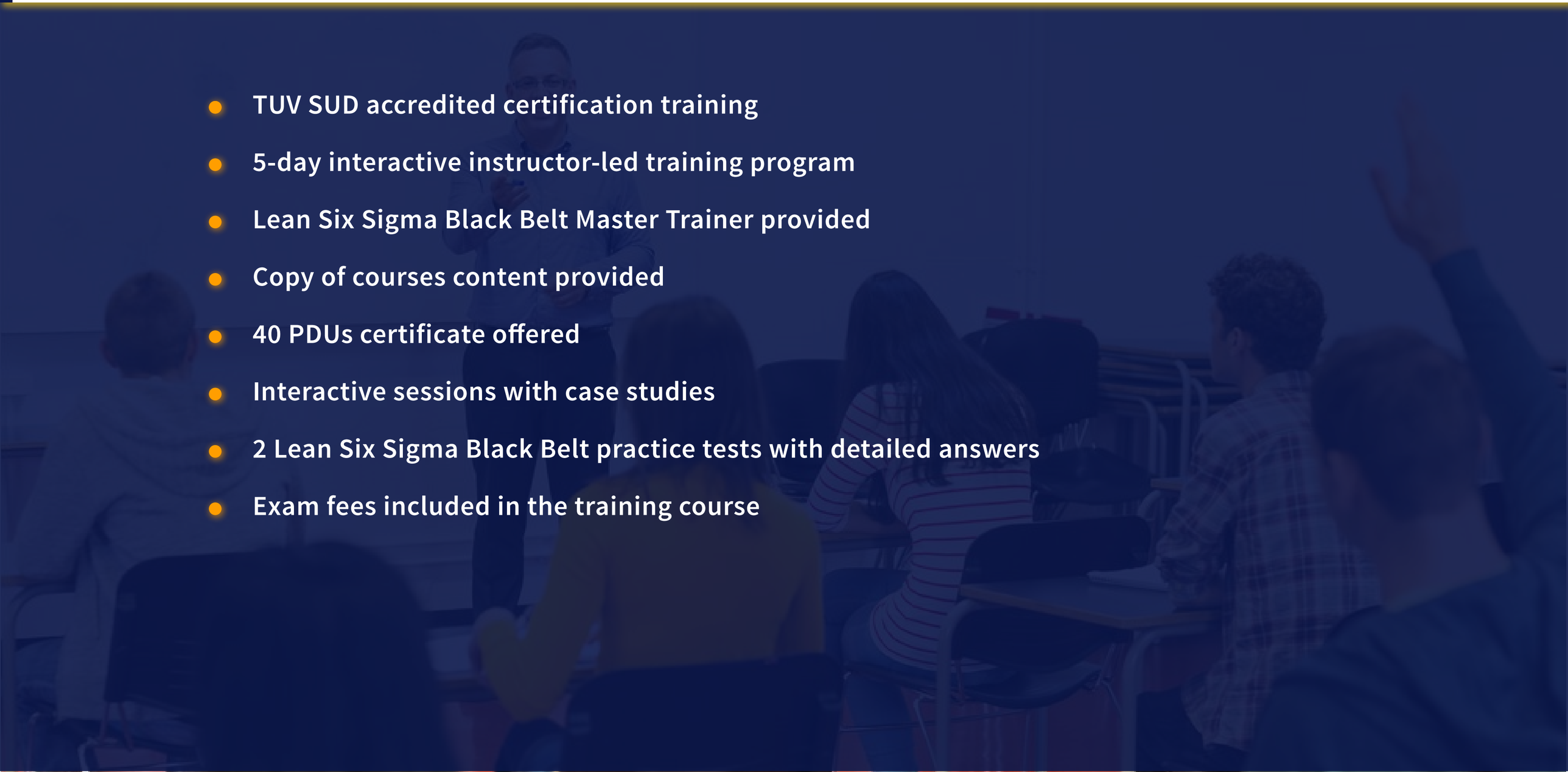
Unichrone Training Advantages



- TUV SUD accredited certification training
- 5-day interactive instructor-led training program
- Lean Six Sigma Black Belt Master Trainer provided
- Copy of courses content provided
- 40 PDUs certificate offered
- Interactive sessions with case studies
- 2 Lean Six Sigma Black Belt practice tests with detailed answers
- Exam fees included in the training course

Lean Six Sigma Black Belt Certification Advantages

- CERTIFIES YOUR TALENT
- HELPS BUILDING VALUES
- BUILDS CUSTOMER LOYALTY
- GLOBAL RECOGNITION
- PERFECT EXECUTION
- MORE EMPLOYABILITY OPTIONS

ELIGIBILITY CRITERIA

Lean Six Sigma Black Belt Certification Training Course is beneficial for engineers, managers, quality professionals and technical staff with a minimum of 2 years work experience.

To take up the Six Sigma Black Belt Certification Training, professionals should have completed their Six Sigma Green Belt Certification.

WHO SHOULD ATTEND

Engineers / Professionals / Executives who want to understand Six Sigma as a management tool for process and performance improvement at their work place Managers, Project Leaders, Senior Engineers, Black Belt Candidates and anyone who desires an understanding of Six Sigma principles and skills.

Also production managers, front line supervisors, quality professionals, and individuals who are responsible for improving quality and processes at an enterprise or departmental level, including champions and process owners.

Syllabus of Lean Six Sigma Black Belt Certification Training

I. Overview: Six Sigma and the Organization

1) Value of Six Sigma

Recognize why organizations use Six Sigma, Origin of Six Sigma.

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.

II. Six Sigma – Define

1) Process elements

Define and describe SIPOC

2) Owners and stakeholders

Identify process owners, internal and external customers, and other stakeholders in a project.

3) Identify Customers & Customer Segmentation

Identify and classify internal and external customers as applicable to a particular project, and show how projects impact customers.

4) Collect & Classify Customer data

VOC, Survey Methods, Kano Analysis.

5)Translate Customer requirements

Translate customer feedback into project goals and objectives, including critical to quality (CTQ) attributes and requirements statements. Use of Quality Function Deployment (QFD) to translate customer requirements into performance measures.

Syllabus of Lean Six Sigma Black Belt Certification Training

6)Project Identification & Planning tools

Define, select, and use

• Affinity Diagrams

• Interrelationship Digraphs

• Tree Diagrams

• Prioritization Matrices

• Matrix Diagrams

• Process Decision Program (PDPC) Charts

• Activity Network Diagrams – Gnatt Charts, PERT & CPM

7)Organizational goals and Six Sigma projects

Describe the project selection process including knowing when to use Six Sigma DMAIC methodology.

8)Project Charter & Project Metrics

Define and describe elements of a Project Charter. Development of metrics – COQ, DPU, DPMO, RTY.

9)Team stages and DMAIC

Define and describe the stages of team evolution, including forming, storming, norming, performing, adjourning, and connectivity with DMAIC.

10)Six Sigma - team roles and responsibilities

Describe and define the roles and responsibilities of participants on Six Sigma teams, including Black Belt, Master Black Belt, Green Belt, Champion, Executive, Coach, Facilitator, Team Member, Sponsor, Process Owner, etc.

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III. Six Sigma – Measure

1) Process Mapping

Develop and review process maps, flowcharts, etc.

2) Process inputs and outputs

Identify process input variables and process output variables (SIPOC), classify as CTQs & CTPs including Control & Noise CTPs.

3) Probability and statistics

Distinguish between enumerative (descriptive) and analytical (inferential) studies, and distinguish between a population parameter and a sample statistic.

4) Basic probability concepts

Describe and apply concepts such as independence, mutually exclusive, multiplication rules, etc.

5) Types of data and measurement scales

Identify and classify continuous (variables) and discrete (attributes) data. Describe and define nominal, ordinal, interval, and ratio measurement scales.

6) Data collection methods

Define and apply methods for collecting data such as check sheets, Stratification, coded data, etc.

7) Techniques for assuring data accuracy and integrity

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

8) Descriptive statistics

Define, compute, and interpret measures of dispersion and central tendency, and construct and interpret frequency distributions and cumulative frequency distributions.

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9) Graphical methods

Depict relationships by constructing, applying and interpreting diagrams and charts such as stem-and-leaf plots, box- andwhisker plots, run charts, scatter diagrams, Pareto charts, etc. Depict distributions by constructing diagrams such as histograms, normal probability plots, etc.

10)Probability distributions

Describe and interpret binomial, and Poisson, normal, chi square, Student's t, and F distributions.

11) Central limit theorem and sampling distribution of the mean

Define the central limit theorem and describe its significance in the application of inferential statistics for confidence intervals, control charts, etc.

12)Measurement system analysis

Calculate, analyze, and interpret measurement system capability using repeatability and reproducibility (GR&R), measurement correlation, bias, linearity, percent agreement, and precision/tolerance (P/T).

IV. Six Sigma – Analyze

1) Cause Analysis

Root Cause Analysis, Cause & Effects Analysis.

2) Failure Mode and Effects Analysis (FMEA)

Define and describe failure mode and effects analysis (FMEA). Describe the purpose and use of the risk priority number (RPN).

3) Run Charts

Plotting Sequential data & analyze for Normality, Trends, Patterns.

Syllabus of Lean Six Sigma Black Belt Certification Training

4) Multi-Vari studies

Create and interprets multi-vari studies to interpret the difference between positional, cyclical, and temporal variation; apply sampling plans to investigate the largest sources of variation. (Create)

5) Simple linear correlation and regression

Interpret the coefficients of co-relation & determination – r & R2 and determine; recognize the difference between correlation and causation. Interpret the linear regression equation and determine its statistical significance. Use regression models for estimation and prediction.

V. Six Sigma – Improve & Control

1) Process capability and performance

Identify, describe, and apply the elements of designing and conducting process capability studies, including identifying characteristics, identifying specifications and tolerances, developing sampling plans, and verifying stability and normality.

2) Process performance vs. specification

Distinguish between natural process limits and specification limits, and calculate process performance metrics such as percent defective. (Evaluate)

3) Process capability indices

Define, and calculate Cp and Cpk, and assess process capability.

4) Process performance indices

Define, and calculate Pp, Ppk, and assess process performance.

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5) Short-term vs. long-term capability

Describe the assumptions and conventions that are appropriate when only short-term data are collected and when only attributes data are available. 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.

6) Process capability for attributes data

Compute the sigma level for a process and describe its relationship to Ppk.

7) Statistical Process Control (SPC)

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

8) Selection and application of Control Charts

Identify, select, construct, and apply the following types of control charts: X-bar −R, Xbar−s, individuals and moving range (I-mR / X-mR), Pre-Control chart, median & moving range, p, np, c, & u.

9) Analysis of control charts

Interpret control charts and distinguish between common and special causes using rules for determining statistical control.

10)Control plans, SOPs, Work Instructions.

Developing these documents and holds the gains, and assist in implementing controls and monitoring systems.

Examination Format

- *Examination paper will consist two parts – A & B*
- *Part A will have 100 MCQs*
- *Part B will be project submission of 50 marks*
- *The examination is considered passed when the two parts of the examination are passed. i.e. each part of the examination must be passed, independently of the other.*
- *Passing part A is a prerequisite for participation in part B*
- *Both of the parts of the examination must be completed within 8 months from the first participation in the part A examination, otherwise the examination is failed. This time limit of 8 months applies in all possible cases, including repetition of individual parts.*
- *Candidate need to score minimum 60 % of the total marks in both the parts respectively and also need to obtain aggregate 70 % marks of the total marks (i.e. 105 out of 150) to pass this examination.*
- *Mode: Electronic or pen paper based for part A*
- *Part B: Formats will be provided for submission of the project.*
- *This is an open book exam*
- *Each question is of one mark*

Duration of exam: Part A : 180 minutes

Part B : *if part A is passed, then submission should take place within 8 months from the date of exam of part A. The submission must occur in any way before the end of 8 month time limit.*

Contact Us

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