National Productivity Council

Bizkraft
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CoE:IT FOR I4.0- E-TRAINING

CERTIFIED LEAN SIX SIGMA BLACK BELT WITH INDUSTRY 4.0 (CLSSBB4.0) PROGRAM

WHO SHOULD PARTICIPATE?

✧ Professional from all functions to enhance their decision making using Data Analytics for achieving their business goals.

✓ *12 WEEKS PROGRAM*

✓ *80 HOURS OF VIRTUAL INTERACTIVE CLASSES WITH PROJECT WORK*

WHY ENROL FOR OF PROGRAM

■ A Certified Lean Six Sigma Black Belt with I4.0(CLSSBB4.0) leads the Six Sigma improvement process.

■ Black Belts through their leadership ability is able to implement the Six Sigma vision in their Enterprise and able to use their expertise and experience in leading, motivating, and influencing project teams.

■ Black Belts are Change Agents while working in unison with team members or other members of the company.

■ Black Belts are effective communicators via their roles as Six Sigma leaders, mentors, coaches, and trainers.

■ Possess know-how of Industry 4.0 Technology Domains and its Implementation Framework

LIVE VIRTUAL TRAINING

INDUSTRY 4.0 MODULES

DELIVERY BY INDUSTRY EXPERTS

LEAN SIX SIGMA BLACK BELT CERTIFICATE

First Batch Commencing from 25th November, 2020

ABOUT THE PROGRAM

❖ The Certified Lean Six Sigma Black Belt with I4.0(CLSSBB4.0) program provides an advanced coverage of the Six Sigma methodology. The Black Belt training course provides not only the practical knowledge but also hands-on experience applying these tools on real-world problems. A CLSSB4.0 leads the Six Sigma improvement process.

CORE COMPETENCY OF CLSSBB4.0 PROGRAM

❖ Black Belts have a thorough understanding of all aspects of the define, measure, analyze, improve, and control (DMAIC) model in accordance with Six Sigma principles.

❖ They possess basic knowledge of lean enterprise concepts, are able to identify non value-added elements and activities, and are able to use specific tools.

❖ They have understanding of project definition as well as team roles and responsibilities.

❖ A Certified Six Sigma Black Belt will:

1-Define projects for Green Belts and Yellow Belts.• Mentor and guide Green Belts and Yellow Belts in the completion of their projects.

2-Utilize statistical analysis software to draw valid statistical conclusions, depict relationships, analyze measurement systems, test hypotheses, design experiments, and apply statistical process control.

3-Manage more advanced Six Sigma projects and serve as a leader and change agent for projects that span the enterprise.

4-Lead organization-wide improvement effort

❖ Advanced understanding of the measure phase, including process mapping, data collection plans and techniques, understanding variation, and visually displaying baseline performance.

❖ Advanced understanding of the analyze phase, including displaying data visually, cause and effect analysis, and verification of root causes.

❖ Advanced learning of the improve phase, including brain-storming, selecting a solution, and implementation planning.

❖ Advanced understanding of the control phase, including assessing the results of process improvement, statistical process control overview, and documenting the process.

❖ One of the USP of this program is inclusion of "SESSIONS ON INDUSTRY 4.0". Industry 4.0 describes the organisation of production processes based on technology and devices autonomously communicating with each other along the value chain. Since the advent of advanced technologies, like Big Data & Analytics, Artificial Intelligence, Machine Learning, 3-D Manufacturing, AR/VR etc., Industry 4.0 helps to improve the overall productivity and helps to detect and improve recurring inefficiencies.

BENEFITS OF PROGRAM

❖ The Course is unique, well structured, growth oriented and fortified with innovative & relevant research.

❖ After successfully completing the Program, the would be a "CETIFIED LEAN SIX SIGMA BLACK BELT WITH INDUSTRY 4.O(CLSSBB4.0)" professional.

❖ The improved skill sets qualifies you for more positions within modern business environments

❖ Adding CLSSBB4.0 to your Resume proves your commitment to improving your business acumen and analytical skills plus your commitment to improving your business within which you work.

COURSE STRUCTURE AND INFORMATION

■ Classroom Sessions – 20 Modules – 4 hrs each
■ Duration – 12 Weeks
■ Exercises and Case study
■ Participation – Interactive Discussions
■ Project Identification hand holding support
■ Project Review
■ Minitab® – software for statistics
■ Continuous Assessment by the Tutor/s
■ Examination – 2 Hrs
■ Certification - on qualifying written test with score of min 70% marks in written test , class exercises & Min 01 Project completion
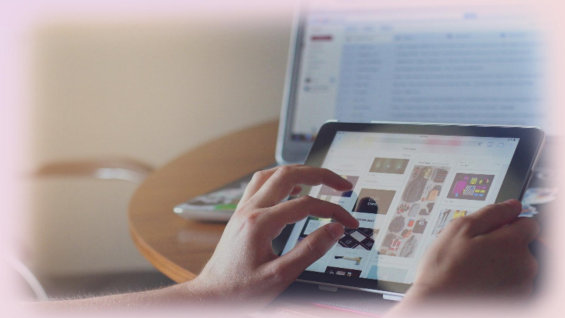
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Note: A Batch normally consists of 15-20 Nos. Of Participants

	Step -O-Organization-Wide Planning and Deployment	
i.	Fundamentals of Six Sigma and lean methodologies	
Ii.	Six Sigma, lean, and continuous improvement methodologies	
Iii.	Relationships among business systems and processes	
Iv.	Strategic planning and deployment for initiatives	
v.	Leadership	
a.	Roles and responsibilities	
b.	Organizational roadblocks and change management	
vi.	Organizational Process Management and Measures	
a.	Impact on Stakeholders & Benchmarking	
vii.	Business Measures – Performance & Finance	
viii.	Team Management	
a.	Team Type , Roles & Responsibility	
b.	Team Member selection criteria	
c.	Team Success factors	
d.	Team facilitation & decision making methods	
e.	Delivery and Effectiveness	
	A-Define	
i.	Voice of Customer	
a.	Customer Identification , Requirements & Expectation Capturing i.e. CT Matrix , SIPOC , CTQ , CTD..	
ii.	Business case & project charter	

a.	Business case with Prioritization Techniques
b.	Problem Statement
c.	Project Scope
d.	Goal & Objective i.e. SMART
e.	Project performance measurements i.e. cost, revenue, delivery, schedule, customer satisfaction
f.	Project charter preparation & review
iii.	Project Management (PM) Tools i.e. Gantt Chart /Tool Gates / Project Score card
iv.	Analytical Tools i.e. Affinity / Tree Diagrams
	B-Measure
i.	Process Characteristics
a.	Process flow Metrics i.e. TAKT Time , Impact of COPQ , C/Time , Throughput Time
b.	Process analysis tools i.e. VSM , Process Map , Gemba Walk etc.
ii.	Data Collection – Types of Data , Measurement Scale , Sampling Methods & Data Collection Points
iii.	Measurement System Analysis
iv.	Basic Statistics
a.	Basic statistical terms i.e. Population & Sample Statistics
b.	Central limit theorem
c.	Descriptive statistics i.e. Measures of dispersion and central tendency.
d.	Graphical methods i.e. Box plots, scatter diagrams, histograms, normal probability plots, frequency distributions, cumulative frequency distributions

e.	Valid statistical conclusions
v.	Probability – Basic Concepts & Various Distributions
vi.	Process Capability & Process Sigma level (Z–Score)
vii.	Process performance vs. Specification i.e. PPM/DPU/DPMO/RTY
C-Analyze	
i.	Measuring and Modelling Relationships Between Variables
a.	Correlation coefficient
b.	Liner Regressions
c.	Multivariate tools
ii.	Hypothesis Testing – Sample size , Point and interval estimates Tests for means, variances, and proportions Analysis of variance (ANOVA) Goodness–of–fit (chi square) tests Contingency tables
iii.	Process Failure Mode and Effects Analysis (PFMEA)
iv.	Additional Analysis Methods i.e. 5 whys, Pareto charts, fault tree analysis, cause and effect diagrams) Gap analysis Root cause analysis Waste analysis – TIMWOOD

D-Improve	
i.	Design of Experiments (DOE)
a.	Terminology
b.	Design Principles
c.	Planning experiments
d.	One-factor experiments
e.	Two-level fractional factorial experiments
f.	Full factorial experiments
ii.	Lean Methods
a.	Waste elimination i.e. Pull systems, kanban, 5S, standard work, poka-yoke.
b.	Cycle-time reduction i.e.continuous flow
c.	Kaizen
d.	Other improvement tools and techniques i.e. OEE
iii.	Industry 4.0
a.	Introduction to Industry 4.0
b.	Gartner's Hype Cycle and its implications
c.	Rule based decision making- Robotic process Automation
d.	Artificial Intelligence- Analytics, Machine Learning and OCR
e.	Connected Systems- IOT and Block chain
f.	Design and Manufacturing technology- 3D printing and Augmented Reality

iv.	Implementation – plans/proposed improvements, including conducting pilot tests or simulations & evaluate results to select the optimum solution.
	E-Control
i.	**Statistical Process Control (SPC)**
a.	Objectives
b.	Selection of Variables
c.	Rational sub grouping
d.	Control chart selection
ii.	**Other Controls**
a.	Total productive maintenance (TPM)
b.	Visual controls
iii.	**Maintain Controls**
a.	Measurement system reanalysis
b.	Control plan
iv.	**Sustain Improvements**
a.	Lessons learned
b.	Documentation i.e. SOP / WI /Control Plan
c.	Training for process owners and staff
d.	Ongoing evaluation

FEE STRUCTURE

- The total fee Per Participant: Rs. 35,000 (plus GST)
- <u>Discounted</u> <u>Fee</u> <u>per</u> <u>Participant:</u>
- ✓ Rs.30,000 (plus GST) for a Nomination of a Group of 3-5 Nos.(From One Organization)
- ✓ Rs.25,000 (plus GST) for a Nomination of a Group of above 5 Nos. (From One Organization)

NOMINATIONS MAY BE SENT THROUGH:

- Participants willing to register in individual capacity, may register themselves on our website and make necessary payments on the link attached. <mark>shorturl.at/avCG7</mark>

- Limited seats available for the present Program and hence the nominations will be accepted on first-cum-first-serve basis.

- Participants sponsored by Organizations may enroll themselves by sending email to the undersigned and providing <u>participants'</u> <u>name,</u> <u>designation,</u> <u>Company</u> <u>Name,</u> <u>contact</u> <u>number</u> <u>&</u> <u>e-mail</u> <u>ID</u>. Kindly also provide GSTIN of your organization at the time of nomination. Please note that participation fee is to be paid at the time of nomination. For making payment through NEFT, details are as under:

ECS Details (For Fee payment):

Bank Name : Indian Overseas Bank,
Branch : 70, Golf Link, New Delhi--110003
Bank Account No : 026501000009207,
IFCS/RTGS/NEFT Code : IOBA0000265,
PAN No : AAATN0402F
GST No : 07AAATN0402F1Z8

FOR FURTHER INFORMATION OR CLARIFICATION KINDLY CONTACT:

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