HIGH VOLUME MANUFACTURING (HVM) DIGITIZATION FOR TECHNICIAN

Logical Operations™

Duration: 6 days

Course Objectives:

- • Understanding the basic foundation of a High Volume Manufacturing (HVM) digitization of the operation
- Learning and understanding of the HVM foundation of system and control related to Kaizen
- Learning and understanding how to Mistake Proof (Poke Yoke) for process and quality control of during the HVM operations
- Technical Reporting with technology automation and continuous improvement
- First level awareness about the HVM operation and expectation.
- Ability to comply to HVM standard operating procedures (SOP) related to cleanroom or shop-floor control and work environment
- Ability to support the next level expectation such as Engineers, NPI team, Supervisor, and management team in producing high quality products

Who Should Attend?

Technicians, Manufacturing Associate, Supervisor, Engineers, Manufacturing employees

Pre-requisite

None.

Course Outlines

Day 1
Lean supply chain management is about promoting efficiency by removing unwanted or wasted components from a process. This process is most often applied to manufacturing, where supplies can be ordered as they're needed rather than holding a lot of inventory as back stock.

Module 1: Introduction of Lean Manufacturing
- Learning Objective and key takeaways
- Mission, Vision, Goals – Ice breaking session

Module 2: Lean Manufacturing Supply Chain Operation
- Lean – The history
- Lean – Ground Rule (Make it simple!)
- What is Lean?
- Why Lean for HVM operation?
- What is Supply Chain?
- What is Waste?
- Muda, Muri, Mura
- 8 Types of Waste
  - Wasted Human Talent
  - Defects
  - Inventory
  - Overproduction
  - Waiting time
  - Motion
  - Transportation time
  - Over processing
- Lean house framework
  - JIT
  - Jidoka
  - Stability
- Just in Time (JIT)
- Tact Time
- Cycle Time
- Lead Time

- Capacity
  - Machine/Workstation capacity
  - Production line/Cell capacity
  - Bottleneck
  - Throughput rate
  - Utilization rate
- Planning
  - Manpower planning
  - Machines planning
  - Build plan
  - Ship plan
  - Material planning
  - Yield and Unyielded planning
- Inventory management
  - Inventory costing , count, type
- 80:20 Rule (Analysis)
- Kanban concepts
  - Pull system
  - Basic types
  - Andon system operations
- Standardize work
- Value Stream Mapping (VSM)

Day 2:
SPC or statistical process control is a statistically-based family of tools used to monitor, control, and improve processes. Statistical Process Control (SPC) training can be time consuming and frustrating because of the complex nature of the statistics underlying SPC control charts. Basic SPC is a comprehensive online SPC training course for engineers, operators, and technicians that makes understanding and applying statistical process control (SPC) concepts easy.

Module 3: Statistical Process Control (SPC)
- What is SPC?
- What are Process Variations?
  - Introduction to Variation
  - Measuring Variation
  - Patterns of Variation
  - Measures of Variation
- What is SPC Control Chart?
  - What a Control Chart Looks Like
  - Interpreting Control Charts & Taking Action
  - Types of Control Charts
  - Control chart variables
  - Control chart pattern
- Why SPC is important in HVM?
- How the SPC process flow works?
  - Identify defined process
  - Identify measurable attributes of process
  - Further control
- Who is the Person in Charge (PIC)?

Day 3:
This course teaches the optimal planning and writing process to convey technical and complex information effectively. And, participant will learn how to write reports more efficiently, saving time and reducing frustration. The course also includes to review final report and ensure future reports are strong.

Module 4: Technical Report Writing – Preparing for the Report
- Project Management for Technical Report Writing
- Teamwork and Logistics for Major Reports
- Estimating Your Development Time
- Generate the Blueprint
- Action Oriented Technical Reporting
- Organize the Sections and Components
- The Numbering System
- Content from Existing Documents, Systems and Experts

Module 5: Technical Report Writing – Generating the Report
- Clarity in Reporting – Use of Emphasis, Concise Active Voice
- Abbreviations, Acronyms and Double Meanings
- Why Readers Become Confused
- One Person's Jargon Is Another Person's Vocab
- Technical Report Tones for Style and Impact
- Using Bullet Points and List
- The Art of Managing Redundancy
- Visual Literacy – Using Images, Charts, Graphs, Pictures, Diagrams, Sketches, Tables
- Reducing the Access Time to Critical Information

Module 6: Technical Report Writing – Completing the Report
- Drafts to Final Copies – Reviewing, Editing and Testing
- How Good is Your Proofreading?
- Writing Impressive Conclusions
- Writing Precise Executive Summaries
- Using Writing/Word Software Effectively for Spelling, Punctuations, Grammar, Structure, Vocabulary, Homonyms
- Technical Report Writing Productivity

Day 4:
KAIZEN is a Japanese word meaning gradual, orderly, change for better, continuous improvement. The KAIZEN business strategy involves everyone in an organization working together to make improvements without large capital investments. By improving standardized programmes and processes, kaizen aims to eliminate waste called Lean Manufacturing.

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Kaizen is a daily process, the purpose of which goes beyond simple productivity improvement. Kaizen also teaches people how to perform experiments on their work using the method and how to learn to spot and eliminate waste in business processes and the process suggests a humanized approach to workers and to increasing productivity.

Module 7: Kaizen Overview
- Concepts and Principles of Kaizen
- Kaizen Application Insight
- Crucial Implementation Issues and Strategies
- Maintaining Kaizen Implementation

Module 8: Kaizen Strategy
- Role of Management
- Planning a Kaizen Continuous Improvement Programme
- Change Management
- Tailoring the Culture to Kaizen
- Kaizen Tools
- Selecting and Handling Projects
- Identifying Teams to Implement Kaizen
- The Roles of Team Members
- Performance Metrics
- Successful Kaizen Implementation

Module 9: Kaizen Tools
- Kaizen Quality Improvement Tools
- 7QC Tools and their Application
- Check Sheet
- Pareto Chart, Histogram, Scatter Diagram
- Process Map
- Cause and Effect Diagram
- Process Map
- Control Chart

Module 10: The Kaizen Week Approach
- Kaizen Week Preparation
- General Kaizen Week Framework
- Facilitation Keys
- Kaizen Team Rules
- Kaizen Week Schedule
- Module 5: 7 Types of Waste
- Overproduction
- Overprocessing
- Waiting
- Motion
- Transportation
- Inventory
- Rework

Module 11: Kaizen Advanced Concepts
- Kaizen Tools and Techniques
- Change Management
- Leadership
- Tailoring Culture

- Aligning Improvement Programs to Business Objectives
- Introduction to Value Street Mapping
- Selecting and Managing Projects
- Developing a Kaizen Roadmap
- Role of the Kaizen Leader
- Planning and Organising Effective Kaizen Events

Day 5:
Poka-Yoke training is an important component of quality management initiatives for an enterprise to ensure they adhere to Zero Quality Control (ZQC) approach.

This approach is usually used with processes that have catastrophic consequences in service failures. Participants taking up this Poka-Yoke training will learn about Poka-Yoke, Zero Defect Quality, Cause of Defects, Types of Human Errors, Waste, 3 rules of Poka-Yoke, and more.

Module 12: Poka Yoke (Mistake – Proofing)
- What is Poka-Yoke?
- History of Poka-Yoke
- Zero Defect Quality
  - What is Zero Defect Quality?
  - Components of Zero Defect Quality
  - Causes of Defects
  - Types of Human Errors
  - Types of Inspection
  - Zero Defect Quality – Point of Origin Inspection
  - Zero Defect Quality – 100% Audit Checks
  - Zero Defect Quality – Immediate Feedback
  - Zero Defect Quality – Poka-Yoke
- Waste
- Poka-Yoke - 6 Principles
- Poka-Yoke System Approaches
  - System Approaches for Poka-Yoke
- Poka-yoke Methods
  - Poka-Yoke Methods - Contact
  - Poka-Yoke Methods - Counting
  - Poka-Yoke Methods – Motion Sequence
- Poka-Yoke Guidelines
- Poka-Yoke Implementation
- 3 Rules Of Poka-Yoke
- Poka-Yoke Exercise

Day 6:
Module 13: Final Test – All Modules
- Recap for Day 1,2, 3, 4 & 5 – Final
- Q&A
- Group presentation (Key lesson learnt and commitment)
- Test
- End class