

HIGH VOLUME MANUFACTURING (HVM) DIGITIZATION FOR OPERATORS



Duration: 5 days

Course Objectives:

- Understanding the basic foundation of a High Volume Manufacturing (HVM) operation.
- Learning and understanding of the HVM basic foundation of system and control related to Cleanroom, Process and Quality Control.
- Learning and understanding of the basic foundation of the problem solving tools and approach.
- Learning and understanding of the basic foundation of the effective communication in English for the HVM operation.
- 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 Supervisor, Engineers and management team in producing high quality products and self-awareness on quality control and problem solving for yield, productivity improvements

Who Should Attend?

Tool Machinist, Manufacturing Associate, Floor Supervisor, Production Operators

Pre-requisite

None.

Course Outlines

Day 1:

Module 1: Introduction & Overview

- Learning Objective and key takeaways
- Mission, Vision, Goals – Ice breaking session

Module 2: Basic English & effective communications skills

- Discussion # 1
- Basic English
 - Reading skills
 - Translation skills
 - Understanding skills
 - Writing skills
 - Listening skills
- Basic English term for Engineering
 - Mechanical
 - Electrical
 - Electronics
 - Products specifications
- Basic English term for Manufacturing
 - Key metrics or KPIs indicators terms
 - Key controls parameters terms
 - Shop-floor system or MES
- Workshop #1
- Learning point # 1



Day 2:**Module 3: Statistical Process Control (SPC)**

- Discussion # 2
- What is SPC?
- What is Process Variations?
- What is SPC Control Chart?
 - Control chart variables
 - Control chart pattern
- Why SPC is important in HVM?
- How the SPC process flow works?
- Who is the Person In Charge (PIC)?
- Workshop # 2
 - SPC chart plotting
 - Calculate SPC variables
 - Calculate UCL,LCL
 - Calculate CpK
- Learning point # 2

Day 3:**Module 4: Cleanroom Engineering & Manufacturing Shop-Floor System**

- Discussion # 3
- What is Cleanroom Technology?
- Why we need Cleanroom to build a products in the HVM shop-floor system?
- Cleanroom classes
- What it means by Cleanliness or Contamination control for a Cleanroom shop-floor environment?
- What it means by ESD control in Cleanroom environment?
- The Dos and Dons for Cleanroom environment
- Other key controls for Manufacturing Shop-Floor work area
 - Manufacturing Execution System (MES)
 - Lot traveller control
 - Inventory and material control
- Workshop # 3
- Learning point # 3

Day 4:**Module 5: Basic Yield and Quality Control in HVM**

- Discussion # 4
- Yield
- Why SPC is important in HVM?
 - What is Yield?
 - What is defect or reject?
 - Why 100% Yield is important to achieve in HVM?
 - How to calculate a Yield?
 - What is the difference between Assembly, Test Yield, Thruput Yield, and Final pass Yield
 - Who responsible for 100% Yield?
- Quality
 - What is Quality control?
 - Why must achieve 100% Quality level?
 - Various Quality metrics (ppm, % failure)
 - What AQL means?
 - AQL table interpretation
 - Who responsible for 100% Quality level?
- Workshop # 4
- Learning point # 4

Day 5:**Module 6: Final Test – All Modules**

- Recap for Day 1,2, 3 & 4 – Final
- Q&A
- Group presentation (Key lesson learnt and commitment)
- Group Assessment & Test
- End class