MTBM

STATISTICAL PROCESS CONTROL (SPC) TRAINING

MTBM Group Sdn. Bhd. (1600656-M)

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Course Title: Statistical Process Control (SPC) Training

Course Validity: 2 Days

Validity: Not Applicable

HRD Corp Scheme: Claimable

INTRODUCTION

This training provides participants with a complete and practical understanding of Statistical Process Control (SPC) and its role in monitoring, controlling and improving manufacturing and operational processes. The course explains how statistical tools help organisations reduce variation, identify abnormalities, improve product consistency and prevent defects. Participants will explore key SPC concepts such as process variation, data types, sampling, control charts, process capability and problem-solving approaches. Through real datasets, hands-on workshops and case study discussions, participants will learn to apply SPC tools, evaluate process performance and implement effective corrective actions that strengthen quality, reliability and operational excellence.

OBJECTIVE(S):

- Understand the purpose and fundamentals of SPC.
- Learn statistical concepts related to process variation and control.
- Create and interpret control charts for variable and attribute data.
- Identify process instability, trends and special-cause variations.
- Perform process capability studies (Cp, Cpk, Pp, Ppk).
- Apply SPC tools for problem solving and improvement.
- Strengthen decision-making using data-driven analysis.

TARGET GROUP(S):

- Quality managers and quality control personnel
- Engineers and technical officers
- Production and process improvement teams
- Laboratory and inspection staff
- Internal auditors
- Anyone involved in process monitoring and data analysis

ENTRY REQUIREMENT(S):

- Able to read, write and communicate verbally in Malay/English

TOPIC(S):

1. Introduction to SPC and Process Variation
2. Basic Statistics for SPC (Mean, Median, SD, Range)
3. Data Types, Sampling Methods and Measurement Basics
4. Control Charts for Variable Data ($\bar{X}$-R, $\bar{X}$-S, I-MR)
5. Control Charts for Attribute Data (p, np, c, u Charts)
6. Process Capability Analysis (Cp, Cpk, Pp, Ppk)
7. Interpreting Control Charts and Identifying Special Causes
8. SPC Implementation, Corrective Actions and Continual Improvement

LIST OF REFERENCE BOOK(S):

- AIAG Statistical Process Control (SPC) Manual
- ISO 9001 Quality Management Principles
- Statistical quality control textbooks and industry guidelines

LIST OF TEACHING AID(S):

- LCD projector
- Computer
- Whiteboard with accessories
- Flip chart with accessories
- SPC worksheets, control chart templates and datasets

METHODOLOGY(S):

- Lecture
- Group discussions
- Case studies
- Hands-on statistical analysis
- Control chart workshops

TRAINING SCHEDULE

Day 1

Time	Activity / Topic
8:30 am – 9:00 am	Registration and Introduction
9:00 am – 10:15 am	Topic 1: Introduction to SPC and Process Variation
10:15 am – 10:30 am	**Morning Tea Break**
10:30 am – 12:30 pm	Topic 2: Basic Statistics for SPC
12:30 pm – 1:30 pm	**Lunch Break**
1:30 pm – 3:30 pm	Topic 3: Data Types, Sampling Methods and Measurement Basics
3:30 pm – 3:45 pm	**Afternoon Tea Break**
3:45 pm – 5:00 pm	Topic 4: Control Charts for Variable Data

TRAINING SCHEDULE

Day 2

Time	Activity / Topic
8:30 am – 9:00 am	Recap of Day 1
9:00 am – 10:15 am	Topic 5: Control Charts for Attribute Data
10:15 am – 10:30 am	**Morning Tea Break**
10:30 am – 12:30 pm	Topic 6: Process Capability Analysis (Cp, Cpk, Pp, Ppk)
12:30 pm – 1:30 pm	**Lunch Break**
1:30 pm – 3:30 pm	Topic 7: Interpreting Control Charts and Identifying Special Causes
3:30 pm – 3:45 pm	**Afternoon Tea Break**
3:45 pm – 5:00 pm	Topic 8: SPC Implementation and Continual Improvement