

Statistical Process Control (SPC)

Course Duration: 2-day; Instructor-led

Time Schedule: 9am-5pm

Lunch: 1:00pm- 2:00pm

Morning Tea-break: 10:30am-10:45am

Afternoon Tea-break: 3:30pm -3:45pm

INTRODUCTION

This training course provides a comprehensive overview of the principles and analysis techniques for effective statistical process control and applications. Candidates participate in hands-on activities and develop presentations based on real-world process scenarios in their company. The course has an easy way to understand text, which helps ensure a comfortable pace and fun learning experience benefiting both the Quality and Operations Team. Fundamentals of statistics & SPC.

LEARNING OBJECTIVE

After completing this course, you'll be able to:

- Understand the statistical concepts underpinning Statistical Process Control
- Understand the effects of variation on processes and be able to use that understanding to make sound decisions
- Able to conduct Process Capability Studies and apply Control Charts in your workplace
- Interpret the output of Statistical Process Control methods effectively, avoiding misconceptions
- and identifying opportunities for process improvement

TARGET AUDIENCE

Engineers, Supervisors, Line leaders, Operators and any staff who involved in SPC activities

METHODOLOGY

Group activities, exercises, videos, sharing of knowledge and case studies will be used to provide participants with learning opportunities.

COURSE OUTLINE

Join and Greet

Introduction & Ice breaking

Pre- Assessment

Module 1: Introduction

- Introduction to SPC / Concept of cost
- SPC as one of the IATF core tools
- Definition of statistic, Process & Control
- Causes of Variation
- Tools of Quality

Module 2: Graphing Data & Assessing Quality

- Overview
- Create, interpret, and edit histograms
- Create and interpret scatterplots
- Arrange multiple graphs on one layout
- Create and interpret control Charts
- Create and Interpret capability statistics

Module 3: Frequency Histograms & Check-sheets

- What is Variation?
- Frequency Histogram
- Constructing a Frequency Histogram
- Interpreting the Frequency Distributions
- Frequency Histogram in Production Situations
- Check sheets Applications

Case Study - Frequency Histogram and Check sheet Application Practices

Module 4: Variable Control Charts

- Using Average and Range Charts
- Interpreting Average and Range Charts
- Signs of Outside Control Limits
- Using Control Charts in Continued Production

Recap on Day 1 Sessions

Module 4: Other Variable Control Charts

- Median and Range Control Chart
- Developing a Median and Range Chart
- Individual and Range Charts
- Developing and Individual and Range Control Chart
- Standard Deviation and Range Chart
- Developing and Standard Deviation and Range Control Chart
- Control Limits

Module 5: Attribute Control Charts

- Reasons of Using Attribute Control Charts
- Percent Defective p-Charts
- Using the p-Charts
- Interpreting the p-Charts
- p-Charts: Inside and Outside Control Limits
- Types of Assignable Causes
- Setting Up Percent Defective p-Charts
- The np-Chart
- The c-Chart
- The u-Chart

Module 6: Machine & Process Capability

- Machine Capability
- Average and Range Chart Method
- Limits for Individuals
- Estimating the Proportion of Parts Out of Specification
- Process Capability, Capability Index, and Capability Ratio

Modu 6: Machine & Process Capability... Continue

Course summary, Q&A
Post Assessment