

2 Day Workshop on Statistical Process Control

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About the Course: SPC

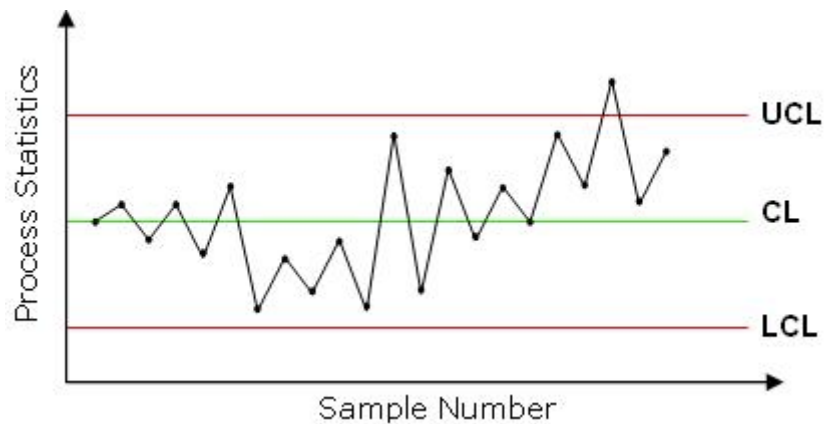
What is SPC?

SPC or statistical process control is a statistically-based family of tools used to monitor, control, and improve processes. Conceptually, it is applying statistical technique to achieve control over the processes to improve their reliability and predictability.

The basic SPC training program of 2 days (this workshop) is a comprehensive training for engineers, supervisors and middle level managers aiming to bring in clarity on statistical concepts and know-hows of statistical process control (SPC) tools and techniques.

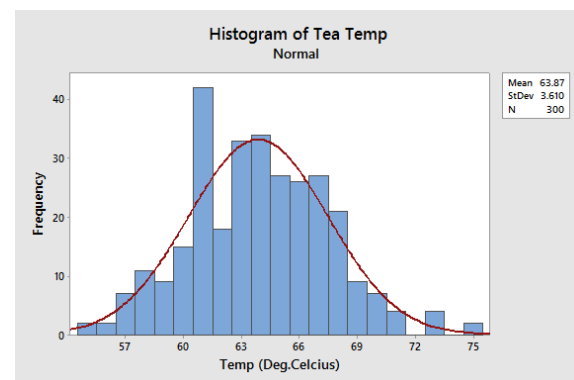
Principles of SPC

1. Every process has variations
2. Operators were reacting to every variation from the target measurement by adjusting the process (say machine setting).
3. Those adjustments cause more deterioration - making processes worse instead of improving them.
4. Continuous measurement of such parameters will help operators to understand the process variations.
5. Once process' inherent variations were understood, operators can decide when to adjust a process and when to leave it untouched.

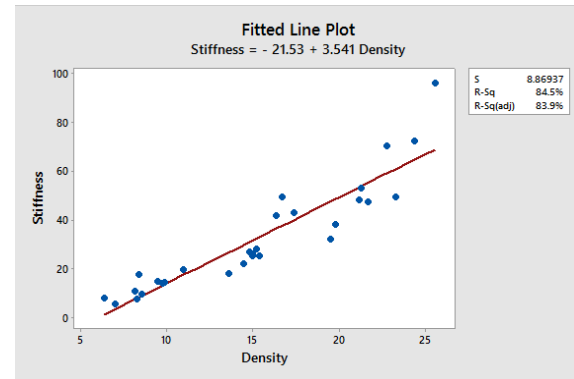


Course Objectives

- Understanding basics of Statistics
 - Central tendency
 - Dispersion of data
 - Populations and Samples
 - Descriptive and Inferential Statistics
- Understanding the Measurement System, Variations in Measurement Systems and analysing it
- Interpreting data to understand voice of process
- Understanding the differences between common cause and special cause variation
- Analysing process variation
- Understanding the characteristics of a normal distribution and how to use a normal curve in estimating proportion of product that meets specifications
- Drawing conclusions using data



- Getting to know how control charts and histograms aid in assessing process capability, and how to use sample data in estimating population characteristics
- Understanding the need and method of calculating capability of processes
- Utilising SPC
 - Types of control charts
 - How to monitor processes using control charts
 - Use of variable control charts



Course Structure

The 2 day workshop is designed in a way to cover the statistical tools used in different stages of SPC.

Perfectly balanced with required amount of theory and statistics, significance of analysis tools, hands on with Minitab / excel with examples and exercises.

Course Duration

- 2 days – 16 hours

Test & Certification

An Objective type test will be conducted at end of second day. Participants with 90% attendance and 70% score in the test will be awarded with CSense Certification.

Course Contents

Day	Contents	Minitab Tools
Day 1	Intro to Statistics - Basics of Statistics - Types of Data - Properties of data - Central Tendency - Dispersion - Understanding Statistics - Descriptive Statistics - Inference from Data - Probability Distributions - Inferential Statistics - Measurement System Analysis - Why MSA? - Gage R&R Voice of Process - Understanding Behaviour of collected data - Trends & Patterns in Data - Trend Analysis - Test for Normality	- Descriptive Statistics - Gage R & R - Time Series Chart - Control Charts - Normality Test - Capability Analysis - Cp & Cpk - DPMO - Standard Normal Distribution (Z)
Day 2	Data Analysis - Basic Data Analysis Tools - Histogram - Pareto Analysis - Box Plot Process Variation & Capability - Variation & its consequences - Variation – Stability Analysis - Process Capability Control Charts - Control Chart for Individual Values - Control chart for Variables (sub group) - Specific uses of other control charts	- Histogram - Pareto Chart - Box Plot - I Chart - I – MR Chart - X bar R Chart - N Chart, P Chart, NP Chart, U Chart

Note: The contents can be customised based on your requirements.

Training Details

- Certification Criteria : 90% attendance in Training Sessions, participation in activities and 70% Score in written test
- Test will be conducted on 2nd day of training
- Laptop / desktop with provision to install software packages for participants to be arranged by client.

Workshop Methodology

- CSense Workshop approach is based on scientifically proven methodologies of Learning, which includes
- Learning by Listening – Class room sessions.
- Learning by Doing – Hands on Support in applying the learning, pilot applications – with Minitab / Excel.

Batch Size

Min 10 and Max 20 Participants per batch

Customisation

We can customise the deliverable as per client's requirements.

Additional Support

Continued coaching and hand-holding support could be provided by CSense after the workshop for successful project completion, as an optional engagement.

About us

About the Faculty

Please visit the link <https://goo.gl/jxfZa1> for detailed profile and <https://goo.gl/5e6fSc> for articles on LinkedIn written by the faculty.

About CSense

Kindly visit our website www.csensems.com to know more about us.

Our Clientele

