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STATISTICAL PROCESS CONTROL TRAINING (SPC)/ PROCESS CAPABILITY

The objective of the Statistical Process Control Training (SPC)/Process Capability curriculum is to provide participants with the analytical tools and methods necessary to:

Understand SPC fundamentals and the importance of reducing variation Implement control charting in order to assess process stability Interpret control chart signals and implement appropriate reaction plans Determine appropriate sampling plans and sample sizes Assess process capability training (for normal and non-normal data) Apply charting techniques for short production runs Apply charting methods where multiple sources of variation may exist (e.g. multiple cavities, filling heads) Apply SPC for naturally trending data (e.g. due to tool wear) Determine the appropriate type of chart for a given process Avoid common misapplications of SPC in practice

Content

SEMINAR CONTENT (3 DAYS)

1.Variation Fundamentals Concept of Variation The Normal Distribution

2.Control Chart Concepts/Examples Control Limits vs. Specification Limits Definition of Control/Stability Definition of Quality Sources of Variation

3.Process Capability Concepts Quality Control vs. Process Control Basic Statistics Individuals, Averages, and the Central Limit Theorem Control Charts Constructing Charts (Variable Data) Xbar/R , Xbar/S, I-MR Charts Chart Signals for Special Causes Interpreting Charts Type I and Type II Errors Recomputing Control Limits Sampling Procedures and Frequency Rational Samples Chart Sensitivity / Sample Size Determining Appropriate Sample Sizes Control Chart Selection Process Capability Stability vs. Capability Types of Capability Assessments Estimating PPM / Proportion Defective The Standard Normal (Z Values) Capability Indices: Cp, Cpk, Pp, Ppk Interpreting Indices Process Capability for Non-Normal Data (Overview)

4.Specialized Charts Short Run Charts Within/Between Charts (Multiple Locations) CUSUM Charts Trending Charts Charts for Attribute Data **WHY ONLINE SPC TRAINING COURSE IMPORTANT?**

Statistical Process Control training course is a method that enables manufacturers to prevent problems and to control their production processes. Unfortunately, it is often applied incorrectly, and the potential benefits are not realized.

When applied properly, SPC identifies changes to a process. These can be changes that are still within specification—but are statistically different than where the process was previously running. By identifying the changes, personnel can identify what caused the change and potentially improve the process or prevent the production of inferior products.

SPC charts can quickly detect increases or decreases in variation, and variation is arguably the biggest problem manufacturers face. If variation decreases, personnel can identify the causes and sustain the improvement. If variation increases, personnel can identify the issue long before parts are scrapped or customers complain.

This course teaches participants the fundamental concepts and methods needed to establish effective control charts and estimate process capability. In addition to learning traditional control charts (e.g. xbar, r/s), participants will be exposed to other useful charts for handling multiple sources of variation (within/between) and short production runs. Practical aspects of implementing SPC on the shop floor are also discussed. **TYPICAL**

ATTENDEES: <https://www.integral-concepts.com/statistical-methods-training/spc-and-process-capability/>
Quality & Process Engineers Quality Technicians SPC Supervisors Production Supervisors Personnel involved in process development and validation Laboratory Personnel Manufacturing/Operations Personnel Process Improvement Personnel Supplier Quality Personnel Six Sigma Professionals
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- [Initial Start](#) - basic knowledge base - this page
- [Blog](#)

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Last update: **2020/06/02 14:29**

