

Statistical Process Control (SPC) and Associated Tools



Course Duration: 3 Days - 8 Hours/day

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Seminar Content

This three-day seminar is designed to provide participants with an understanding of topics of statistical process control through presentations, illustrations and examples of the analysis of data. Participants will learn how to implement SPC within industries that have set up variation, slow and rapid tool wear, and chemical processes where concentration adjustments occur on a daily basis. Emphasis on analysis of the data and effects on the processes using eight types of control charts expands the users' ability to address non-normal, multivariate, and unilateral variables.

This seminar is consistent with the SPC2ndEdition Reference Manual issued by GM, Ford and FCA through the AIAG.

Learning Objectives

- ❖ Identify the different uses of basic variables control charts
- ❖ Explain common and special causes
- ❖ Relate within and between variation to common and special causes
- ❖ Explain the relationship between C and P indices, and the different methods of estimating standard deviations
- ❖ Identify appropriate uses for Cp, Cpk and Pp, Ppk
- ❖ Explain the relationship between the capability indices to determine process improvement actions
- ❖ Explain the relationship between process control and process capability

Seminar Outline

- ❖ SPC Background
- ❖ Normal Theory and the Central Limit Theorem
- ❖ Introduction to Control Charts
- ❖ Breakout Exercise: Sampling Plan
- ❖ Variable Control Charts
- ❖ Breakout Exercise: X & S Charts
- ❖ Breakout Exercise: X & MRCharts
- ❖ Attribute Control Charts
- ❖ Analyzing Control Charts
- ❖ Breakout Exercise: Interpreting Control Charts
- ❖ Capability Analysis
- ❖ Breakout Exercise: Calculating Indices
- ❖ Other Types of Control Charts
- ❖ Breakout Exercise: Short-Run c Chart
- ❖ Process Improvement Cycle and Process Control
- ❖ Breakout Exercise 6: Control Chart Concepts

Who Should Attend

This seminar is designed for who have direct responsibility for defining and developing an organization's measuring, monitoring and analytical practices using data collection, charts and statistical tools appropriate for its products, processes and business goals and objectives. We will look for suitable statistical tools to identify the same sources of variation in our manufacturing or services and to control that variation.

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Global Headquarters Omnex Inc., 315 E. Eisenhower Parkway, Suite 214, Ann Arbor, MI 48108. USA.
Phone: (734) 761-4940 | Fax: (734) 761-4966 | Email: info@omnex.com | Web: www.omnex.com

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Seminar Materials

Each participant will receive a seminar manual, including workbook and all team exercise materials.

Please bring a calculator.

Pre-Requisite

A basic knowledge of computational mathematics, a practical understanding of elementary applied statistics, and a basic background in statistical process control are important.

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