

Statistical Process Control (SPC) - - Level 2

INTRODUCTION

This program provides the principles and concepts of Statistical Process Control (SPC) that is so vital to Quality Improvement programs in the industry. It demonstrates the power of proven techniques to assist with problem solving and process control. This SPC 2 course emphasizes on advanced control charting, Process Capability Study, Sampling Plans, Hypothesis testing and Gage Repeatability and Reproducibility (GageR&R) techniques. Different from traditional method of teaching SPC, this program capitalizes on the utilization of common computer spreadsheet software to accelerate all those meticulous calculations, graphing and searching of statistical tables activities. In doing so, it allows participants more time to focus on fundamental analysis and results oriented rather than activities oriented. Apart from lectures and practice sessions, this program also includes computer simulations to help reinforce participant's understanding of the control charts functionalities with an emphasis on participation throughout. This training program is a follow-up program of SPC 1.

CONTENTS

- Introduction to computerized statistical calculations & graphing techniques.
- Using computer spreadsheet for Control Charting
- Summary of Statistical Process Control (SPC1)
 - A Process Control System
 - Setting up control charts: Variables
 - Setting up control charts: Attributes
 - Selection of control charts
 - Short run processes
- Process Capability Study
 - Understanding Cp, Cpk, Six sigma
 - Determining the correct Cp, Cpk
 - Conducting a Process Capability Study
 - More Capability indices
 - Introduction to Six Sigma quality
- Introduction to optimization and reduced variability:
 - Statistical hypothesis testing
 - Comparison test (one sample and two samples)
 - T-test
 - f-test
 - Multiple sample comparison
 - Least Square Method
 - ANOVA
 - Normality test
- Sampling Plan
 - Introduction to sampling techniques
 - Type of risks, OC curves, ARLs
 - Determining Sampling Plans
- GageR&R
 - Accuracy and reliability
 - Calculations for Repeatability and Reproducibility
 - Interpreting R&R
- Practical procedures
 - Shop floor considerations for Process capability study
 - Practical uses for computer spreadsheet software
 - Case study

Special note: To achieve the accelerated learning objectives of this course, it is preferable that participants should have some basic computer spreadsheet skills (such as MS Excel, using formula, edit graphs, printing, etc)

OBJECTIVES

At the end of the program, participants will be able to:

- Understand the overall concepts, principles and methods using “Statistical Process Control” as an important tool in performing Quality Control activities;
- Sharpen the skills to quickly construct control charts using the computer spreadsheet software.
- Acquire the basic knowledge of analyzing control charts and its patterns.
- Identify practical opportunities to conduct Process Capability Studies.
- Utilizing statistical hypothesis testing to further reduce variability
- Understand Sampling Plan techniques
- Understand gauge variability

WHO SHOULD ATTEND

Statistical Process Control 2 is useful for Managers, Engineers, and Foreman from the manufacturing industry that had prior basic SPC training.

ADMINISTRATIVE DETAILS

Duration : 2 days

Time : 9.00am – 5.00pm

Venue : In-house or external training program

ABOUT THE TRAINER

Nelson Kok is a graduate from the Universiti Sains Malaysia, and holds a Master in Business Administration (MBA) and a B.Sc (Hons) degree in Physics. He has more than 24 years of work experiences, of which 17 years are in Training & Development related field, working with both multinational companies such as AT&T Consumer Products Pte Ltd, Corner Peripherals Sdn Bhd, Read-Rite (M) Sdn Bhd, and local companies such as Globetronics Technology Berhad, Amquest Sdn Bhd and GGN Solutions.

He now served as an associate consultant and a freelance corporate trainer to several training providers in Malaysia, China, Singapore & Sudan Africa. He has conducted many training programs for both multinational and local companies. He also served as a lecturer for several higher learning institutes such as Open University Malaysia (OUM), Society of Business Practitioners, UK (SBP), International Centre for Quality, Sudan. Throughout his career, he was a certified trainer for many management, quality and productivity programs such as *Performance Management System (PMS)*, *Managerial Decisions & Business Modeling*, *Managerial Statistics*, *Effective Leadership Skills*, *Train-The-Trainer*, *Total Quality Management (TQM)*, *Statistical Process Control (SPC)*, *Quality Control Circles (QCC)*, *Quality Improvements using 7QC Tools*, *7 Steps Problem Solving*, *5S Good Housekeeping*, *QIT*, *MRPII*, *ERP*, *Team Building Program*, *Effective Meetings Workshop*, *Effective Supervisory Skills*, *Communication and Leadership Skills*, *Problem Solving & Decision Making*, *Effective Time Management*, *Motivation At Work*, *Frontline Leadership Program*, and *7 Habits of Highly Effective People*. He has also conducted many quality audits and was directly involved in company's ISO 9001 and Quality Management Excellence Award (QMEA) certifications. Nelson's area of specialization is in helping organizations to achieve higher effectiveness and productivity using proven Management, Quality and IT tools and techniques.