Quality LearningHub & Consultancy Singapore
22 Sin Ming Lane, #06-76 Midview City
Singapore 573969
Tel: (65) 6502 8238
Email: carina@qualitylearninghub.com.sg
Website: www.qualitylearninghub.com.sg

ADVANCED STATISTICAL PROCESS CONTROL

Introduction:

This course builds on the fundamental SPC concepts and the traditional control charts learned in the SPC workshop. It provides an even deeper understanding of the underlying concepts and methods of statistical control tools.

Course Objectives:

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

- Set up a variable and attribute control chart
- Select the proper type of control chart for the process
- Make use of advanced statistical techniques to quantify the treatment/s that have real influence over the process
- Reduce the time needed to calculate and analyze advanced control charts, as well as Process Capability Analysis
- Conduct a full process capability study

Course Content:

1.0 Advanced Univariate Control Charts
- 1.1 Exponentially Weighted Moving Average (EWMA) Control Chart
- 1.2 Zone Control Chart

2.0 Statistical Testing
- 2.1 Sample Size Determination
- 2,2 Chi-Square Contingency and outliers test
- 2.3 Confidence Interval studies and use of confidence interval in GR&R
- 2.4 Hypothesis studies
- 2.5 Engineering Tolerance and Specification

3.0 Analysis of Variance Study
- 3.1 One-way ANOVA
- 3.2 Two-way ANOVA
- 3.3 Multi-factors ANOVA for GR&R Study

Quality LearningHub & Consultancy Singapore
22 Sin Ming Lane, #06-76 Midview City
Singapore 573969
Tel: (65) 6502 8238
Email: carina@qualitylearninghub.com.sg
Website: www.qualitylearninghub.com.sg

4.0 Comparative Study
- 4.1 Independent-t and Pair-t test
- 4.2 Fisher test

5.0 Analysis of Means (ANOM)
- 5.1 ANOM concepts
- 5.2 Determine the decision limits for ANOM
- 5.3 Comparing the effect of k different treatments
- 5.4 The Role of the Range Chart with ANOM

6.0 Multivariate Studies
- 6.1 Multivariate Normal Distribution
- 6.2 Displaying Multivariate Normal Data
- 6.3 Multivariate Data Correlation study
- 6.4 Multi-characteristics Control Chart
- 6.5 Multivariate Hotelling's T^2 Control Chart

7.0 Exercises / Case Studies

Prerequisite:

Participant should have a basic understanding of statistical methods.

Who Should Attend:

This course is suitable for any individual involved in manufacturing, process, production, quality, design and tests engineering and for those responsible for setting up control charts and conducting process capability studies. This course is also beneficial for anyone who needs an advanced understanding of SPC.

Award of Certificate:

Participants will be issued with a Certificate of Successful Completion upon meeting 75% of the required course attendance.

Duration:

2 days (14 hours)

Quality LearningHub & Consultancy Singapore
22 Sin Ming Lane, #06-76 Midview City
Singapore 573969
Tel: (65) 6502 8238
Email: carina@qualitylearninghub.com.sg
Website: www.qualitylearninghub.com.sg

Course Fee:

$800 nett per trainee (GST is not applicable).

(Course fee is inclusive of all training materials and light refreshments.)