Statistical Process Control (SPC)

for Managers, Engineers, Executives, Quality Practitioners and any member who is from Process, Research and Development, Quality and Production Department

10 & 11 May 2016 (9.00 am – 5.00 pm), Sunway Hotel Seberang Jaya

Statistical Process Control (SPC) was pioneered by Dr Walter A Shewhart and taken up by W. Edwards Deming with significant effect by the Americans during World War II to improve industrial production. Deming was also instrumental in introducing SPC methods to Japanese industry after that war. Dr Shewhart created the basis for the control chart and the concept of a state of statistical control by carefully designed experiments. Dr Shewhart concluded that while every process displays variation, some processes display controlled variation that is natural to the process, while others display uncontrolled variation that is not present in the process causal system at all times. When a process is in control, it becomes very important to determine how capable of the manufacturing process is meeting the customer's requirements. Unfortunately, many questions exist about how these studies should be done, and if done correctly, what the results actually mean. This program is to clarify the above confusion. The application of relevant computer software such as Minitab, MS Excel and/or SQCPack also will be covered in simplifying the statistical calculation and analysis.

Learning Objectives/Outcomes

- ✓ To identify specific area in your company where quality and productivity improvement methodology can be applied
- ✓ To in-depth understand the concepts of underlying SPC
- ✓ To examine necessary steps in implementing SPC methods into your company effectively
- ✓ To gain the knowledge of process characterization, control & improvement flow
- ✓ To measure the effectiveness and efficiency of SPC
- ✓ To use Minitab, MS Excel and SQCPack for SPC related analysis

100% SBL claimable

Normal Fee: RM1000 per participant

Register by *26 Apr 2016*, or Group of 2 or 3 Participants: **RM920/Participant**
Group of 4 or 5: **RM880/Participant**

Certificate of participation will be awarded upon completion of the program

Program Outline

Fundamentals of Process Improvement
- Deming Management Philosophy
- Definitions of Statistics, Process, Control
- Elements of a Process
- Concept of Detection and Prevention
- Concept of Variation:
  - Types of variation
  - Stable versus Unstable Process
  - Common/Natural vs Special/Assignable Causes
  - Behaviour of Sample Statistics

Exercise

Deriving Information from Data
- Histogram and Frequency Distribution Curve
- Normal Distribution & Its Characteristics
- Sample versus Population
- Standardized Normal Distribution
- Process Sampling
- Information from Distribution
- Measures of Location / Skewness and Dispersion / Variation

Exercise

Statistical Process Control
- Concepts behind Control Chart
- Relationship between Frequency Distribution and Control Charts
  Variable vs Attribute Control Charts

Variable Control Charts
- Basic Variable Control Charts - Xbar-R, Xbar-S, Xi-MR, Median-R, Pre-Control & Cumsum Chart
- Subgrouping Techniques
- Identification of Critical Process Parameters and Product Characteristics for Control Charting
- Construction of Variable Control Charts
- Data Collection and Calculation
- Calculating Control Limits
- Difference between Specification Limits and Control Limits
- Control Charts Interpretation
- Out-of-Control Corrective Action
- Characteristics of an Effective Control Chart

Attribute Control Charts
- p, np, c and u Attribute Control Charts
- Construction of Attribute Control Charts
- Data Collection and Calculation
- Calculating Control Limits
- Control Charts Interpretation
- Out-of-Control Corrective Action

Exercise

Process Capability Study
- Importance of Stability
- Definition of Statistical Control
- Definition of Capability Ratio and Capability Indices
- Calculation of Capability Ratio and Capability Indices - CR, Cp, Cpl, Cpu, Cpk, Pp, Ppk and Cpm
- Interpret Capability Ratio & Indices
- Transformation of Process Capability Information into Graphical Illustration for better understanding
- Estimating Process Yield and Rejection Rate, ie. Zu and Zl calculation
- How to improve Process Capability?

The Trainer

Mr Kuang Kok Hoo is a graduate from the University of Science Malaysia. He majors in Applied Statistics and Operational Research and Minors in Management. He is a Senior Member of the American Society for Quality (ASQ) and ASQ Certified Quality Engineer (CQE), Certified Manager of Quality/Organizational Excellence (CMQ/OE) and Certified Six Sigma Black Belt (CSSBB). He is also the Lead Auditor from International Register of Certificated Auditor (IRCA), United Kingdom specializing in ISO 9000 QMS, ISO 14001 EMS, ISO 22000 Food Industry QMS, ISO/TS 16949 Automotive QMS, Six Sigma Champion/Leader and Black Belt. As a PSMB Certified Trainer, he has conducted various kind of trainings such as ISO 9000, ISO 22000, ISO/TS 16949 QMS, ISO 14001 EMS, Train the Trainer, SPC, Advance SPC, 6 Sigma Programs (6 Sigma Champion/Leader, Black Belts and Green Belts), FMEA, Acceptance Sampling Plans, GR&R, DOE, Product Reliability & Liability, 7 QC Tools, 7 Advance Quality Management & Planning Tools, 5S Housekeeping, QCC, Productivity & Quality Improvement and etc. With more than 15 years of working experience directly in the Quality discipline, he has served QC/QA, TQM, Quality System and Training position in the electronic components, semiconductors, computer peripherals and automotive manufacturing industries. Besides that, he also was invited to conduct training for various manufacturing industries like steel and metal, motor and motorcycle, foods, furniture, oil processing and rubber & plastic products, semiconductor & electronics components, pharmaceutical, computer peripherals and telecommunication. He believes in Competency Based Training (CBT) and promotes these concepts which emphasize the Consistent Application of Skills and Knowledge to Workplace Standards across the Full Range of Conditions.

For Registration Form, Contact Miss Ng or download from www.XcelLearn.com

Customised In-house training also available.

☎ **04 – 640 1616** ✉ **cschong@xcellearn.com**

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REGISTRATION FORM

	Name of Participant(s)	I/C No	Designation	Vegetarian(✓)
1.				
2.				
3.				
4.				
5.				

Company Name _____

Company Address _____

_____

Contact Person _____ Designation _____

Tel _____ Fax _____ Email _____

Nature of Business _____

Enclosed is the Cheque (No: _____) of RM _____, crossed and made payable to "**XCELLEARN RESOURCES BHD" (AmBank (M) Berhad A/C No: 093-201-200414-5).**

Do you need us to assist you on the booking of hotel accommodation? Yes ☐ No ☐

If yes, please specify: Check-in Date _____ Check-Out Date _____

* The hotel accommodation is subject to availability. Please re-confirm with the coordinator before the training and make payment directly to the hotel on check-in date.

Terms & Conditions

1. The above registration fee is 100% claimable under SBL scheme. Please apply to HRDF for approval before the commencement of the program.
2. The fee is inclusive of training materials and meals (2 Tea Breaks and 1 Lunch) at the hotel.
3. If notice of withdrawal is given in writing before the confirmation of your registration, no fee is charged.
   No cancellation is allowed once confirmation letter is forwarded to you. If the registered participant is unable to attend, a substitute is allowed. No refund if participant does not turn up or being substituted on the training day.
4. Cheque should be crossed & made payable to "**XCELLEARN RESOURCES BHD" 1 WEEK BEFORE** training.
5. **XcelLearn** has the right to change the dates, time, venue, trainer or cancel the training scheduled due to circumstances beyond its control.

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