Application of Statistical Process Control (SPC)

Training Programme
by
Dream Catcher Consulting Sdn Bhd

10 - 11 Jun 20
Dream Catcher Consulting Sdn Bhd, Penang

303-4-5 & 303-4-6 Block B, Krystal Point
Jln Sultan Azlan Shah 11900 Sg Nibong Penang, Malaysia
http://dreamcatcher.asia
enquiry@dreamcatcher.asia
+604 640 7111 / 7112
+604 640 7110
Synopsis

Variability, in which no two units of product are exactly alike, exists in any manufacturing operation regardless of how well it is designed. For the product to meet or exceed the requirements of customers, the manufacturing operation must be capable of producing output with little variability around the product's target or nominal dimensions. Statistical Process Control (SPC) is an effective means towards achieving this. The routine application of SPC will enable the engineer to understand process variation and as a whole a company to continuously reduce the amount of variability in its output and to avoid off-specification product.

Course Highlight
This course provides a basic understanding of the important concepts in SPC and focuses on the powerful SPC technique of control charts. Practical information on how to properly implement and maintain SPC control charts in a manufacturing environment will be emphasized. The use of statistical method for performing the necessary calculations in SPC will also be illustrated.

What You Will Learn

- Key SPC concepts
- Types of SPC control charts for variable and attribute data
- Setting up and using SPC control charts
- Interpretation of control charts and action
- Process capability and comparison with different processes
- Process capability assessment

Who Should Attend

- Process engineers
- Quality engineers
- Design engineers
- Customer service engineers

Prerequisite

Basic background in statistics.

Course Methodology

This course is presented in the form of lectures and group discussions. Case studies will be cited. Participants will be assigned individual as well as group exercises throughout the entire course duration.

Course Duration
Course Structure

**SPC Level 1 - Introduction to SPC**

1) SPC and Variation
- SPC's advantages vs. quality control by inspection
- SPC's purpose is to "fight variation"
- Differences between attribute and variables data
- Explanations of special and common cause variation
- How SPC can be used to detect the different types of variation in manufacturing processes.

2) Pictures of Numbers - Histograms
- Building, reading and identifying parts of a histogram
- Histograms make visible the patterns caused by variation
- Histograms can show the ability of a process to meet customer specifications

3) Introduction to Control Charts
- Understanding the parts of control charts
- Control charts are calculated from the process data itself
- Control charts can indicate whether process variation is from common or special causes
- Rules governing use and interpretation of control charts

4) Exercises or Test are introduced at appropriate stage to check the proper understanding of Level 1 knowledge

**SPC Level 2 - Applying SPC**

1) Selecting Parameters
- Taking a new look at your process
- Preparing to collect data
- Block diagrams, pareto charts, fishbone diagrams
- Parameter test checklist and monitoring priorities
- Manufacturing case study

2) Types of Control Charts
- Control chart review - benefits, parts, rules
- Variables control charts - X bar and R chart, X bar and S chart
- Attribute control charts - P, NP, C, U charts
- Choosing the appropriate control chart

3) Setting Up and Using a Control Chart
- Rules for constructing variables and attribute control charts
- Calculator tutorial
- Basic statistics and step-by-step directions for setting up an X bar and R Chart and a C Chart

4) Interpretation and Action

- Control chart patterns and possible causes
- Control charts as an indicator of process problems
- Deciding when and if to adjust a process
- Steps to determine the causes of variation

5) Exercises or Test are introduced at appropriate stage to check the proper understanding of Level 2 knowledge

**SPC Level 3 - Process Capability**

1) SPC Review
- Quality is key to customer satisfaction and global competitiveness
- SPC is a technique that supports continuous improvement
- Reduce variation and produce as close to target as possible
- Use SPC tools to help determine when to investigate and take action and when to leave a process alone

2) Introduction to Process Capability
- Defined as the extent to which a stable process is able to meet specifications
- Monitor process stability using control limits; assess process capability using spec limits
- How dispersion changes affect a control chart and histogram
- Use sample data to estimate population characteristics
- Compare relative capabilities of different processes

3) Using Normal Curves
- Characteristics of a normal distribution - shape, central tendency and dispersion
- Estimating standard deviation
- Using the Standard Normal Table
- How the area under the normal curve can predict yield and the amount of product not meeting specifications

4) Process Capability Assessment
- Assessing process capability using numerical methods
- Using standard deviation to calculate natural tolerance
- Calculating Cp, Cpk, the differences between them and how process changes affect them.
- Attribute data process capability assessments

5) Exercises or Test are introduced at appropriate stage to check the proper understanding of Level 3 knowledge

Course Instructor(s)
Mr Mohd Nizam Mohd Amin

Nizam Amin is a highly experienced trainer, consultant, and motivator with more than 24 years of working & consultation experience in Quality Assurance, Production, Process Engineering, Sales & Marketing and Business Development.

He is highly expert and skilled in the field of Production Management, Quality & Productivity Improvement Program, Root-Cause Problem Solving Technique, Lean Manufacturing, Poka-Yoke, Team Building and many more.

Since 2010, he has been actively involved in the Lean Operation Management program involving "Japanese, Korean, Singaporean & Malaysian" companies operating in Asia. His approach is unique involving "Gemba" or On-Site activities and hands-on sessions. All his Lean programs are customized to each individual customer's needs. Under his "Consultative Training" program, customers are able to quickly apply and adopt the program effectively by providing close monitoring during the entire program duration.

Since starting his career as a consultant and professional trainer in 2004, he has covered various industries such as Semiconductor, Electronic & Electrical, Automotive, Plastic, Food & Beverage, Recycling & Waste Management Industry and many more; involving SMEs, MNCs, and GLCs.

In 2015, he has been appointed as a 3rd party Consultant to JETRO (Japanese External Trade Organization) under METI (Ministry of Export, Trade & Industry). He was also a joint consultant for Lenovo Inc., Japan providing consultation in business & market research for Japanese companies in Japan in the field of Green Technology, Recycling Technology, Waste Management & Waste Hazardous Management. He also provides his services to Tokyo Suido Service Co Ltd (TSS) for Non-Revenue Water (NRW) Training in Malaysia. TSS is a wholly-owned company under Tokyo Metropolitan Government.

In 2017 and 2018, he is heavily involved with IATF 16949 and ISO 9001 training and consultation programs extending his services beyond Malaysia to Iwate Japan as a consultant for an R&D company making carburetors. In 2019, his involvement in a practical approach training using customer data has further expanded his services to companies in car industries.

Nizam Amin is the few experienced trainer able to analyze customer existing data during his training session. Real Data for training provide a clearer picture to participants wanting a quick knowledge transfer between trainer and participants.
**Administrative Details**

**Programme Logistics**

Duration: 2 day(s), 9am - 5pm  
Date: 10 - 11 Jun 20  
Venue: Dream Catcher Consulting Sdn Bhd, Penang

Morning break, lunch and tea break will be provided throughout the course duration. Course Manual and Certificate of Attendance will be provided.

**Your Investment**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Price per Pax</th>
<th>SST (6%)</th>
<th>Price per Pax incl SST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular fee</td>
<td>RM1,400.00</td>
<td>RM84.00</td>
<td>RM1,484.00</td>
</tr>
<tr>
<td>Saver Package (2 pax)</td>
<td>RM1,100.00</td>
<td>RM66.00</td>
<td>RM1,166.00</td>
</tr>
<tr>
<td>Advantage Package (5 pax)</td>
<td>RM900.00</td>
<td>RM54.00</td>
<td>RM954.00</td>
</tr>
</tbody>
</table>

Additional cost may incur for customization or extra material request. Course fee is 100% claimable from PSMB (SBL scheme) in accordance to PSMB guidelines.

**3 Easy Steps to Register**

- **Phone** +604 640 7111 / 7112  
- **Fax registration form** to +604 640 7110  
- **Email registration form** to register@dreamcatcher.asia
Method of Payment

Crossed cheque / bank draft made in favour of DREAM CATCHER CONSULTING SDN BHD.
Registration form
together with payment to be couriered to :

Dream Catcher Consulting Sdn Bhd
303-4-5 & 303-4-6
Block B, Krystal Point
Jln Sultan Azlan Shah
11900 Sg Nibong
Penang, Malaysia

Payment must be received no later than 10 working days before the course commences. An
undertaking may be accepted in cases where payment is delayed. However all payments must
be made before the course commences.
Closing registration date is 27-May-2020.

Refund and Cancellation

Fees will only be refunded in full for cancellation received in writing more than 10 working days
prior to the commencement date. Substitute attendee(s) will be accepted at no extra charge.

Disclaimer

Dream Catcher Consulting Sdn Bhd reserves the right to change the instructors, date and to
vary/cancel the programme should unavoidable circumstances arise. All effort will be taken to
inform participants of the changes. Upon sending the registration form, you are deemed to
have read and accepted the terms.

Enquiries

call us at +604 640 7111 / 7112 or email us at enquiry@dreamcatcher.asia
## Registration Form

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Application Of Statistical Process Control (SPC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Date</td>
<td>10 - 11 Jun 20</td>
</tr>
<tr>
<td>Location</td>
<td>Dream Catcher Consulting Sdn Bhd, Penang</td>
</tr>
</tbody>
</table>

*(Emails are required to ensure notification of any changes reach the participant)*

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Job Title</th>
<th>Department</th>
<th>Email</th>
<th>Mobile Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Amount

*(Emails are required to ensure notification of any changes reach the participant)*

Submitted by:

- Company Name: ____________________________
- Company Address: ____________________________
- Contact Person: ____________________________ Designation: ____________________________
- Dept: ____________________________ Phone: ____________________________
- Email: ____________________________

*Please complete this form with an authorised signature below and fax to fax registration form to +604 640 7110 or email to email registration form to register@dreamcatcher.asia. Call us at phone +604 640 7111 / 7112 for any enquiry*

Authorised Signature: ____________________________

*Please print full name (authorised signature) if you submit via email*

Name: ____________________________ Designation: ____________________________
Dept: ____________________________ Date: ____________________________

*This registration is invalid without a signature. Payment must be made no later than 10 working days before the course commences. An undertaking may be accepted in cases where payment is delayed, however all payment must be made before the course commences. Participants who registered but did not attend will be invoiced accordingly. Fees will only be refunded in full for cancellation received in writing more than 10 working days prior to the commencement date. Substitute attendee(s) will be accepted at no extra charge.*

Please send payment with this form to
Dream Catcher Consulting Sdn Bhd
303-4-5 & 303-4-6
Block B, Krystal Point
Jln Sultan Azlan Shah
11900 Sg Nibong
Penang, Malaysia

Enclosed cheque/bank draft no ____________________________ made in favour of DREAM CATCHER CONSULTING SDN BHD