



**TWO DAYS WORKSHOP ON
ADVANCED STATISTICAL PROCESS CONTROL
Based on 2nd Edition of AIAG SPC-Manual**

Course Outline and Objective

Statistical process control or SPC is a statistically-based family of tools used to monitor, control and improve the behavior of processes. However, selecting and setting up the right type of SPC control chart for a given process is crucial to getting the most benefit from statistical process control. Though, the conventional process control charts are generally useful, there are situations the process control practitioners often face difficulties in using conventional charts and need to be equipped with, other than the conventional charts, advanced tools for process control and capability study most suitable for the specific application .

QGS Training Institute Private Limited (**QGS**), an education wing of **Quality Growth Services Pvt Ltd.**, has always been pioneer in assisting industries in elevating the competence of the personnel and promoting Quality Culture among the industries in India and abroad over the decade.

We, pleasantly, take the opportunity to announce a two days training cum workshop on '**Advanced Statistical Process Control** '

The objective of this course is to equip the participants with in-sight view and total exposure to the concept, requirements and practices of

- Process Control and Statistical Process Control,
- Conventional Control Charts (Xbar-R/S, I-MR, p/np, c/u)
- Additional Interpretation
- Rational Subgrouping
- Situation and process specific Control Charts (DNOM, Stoplight, I-R-MR, Standardized, Zone etc...)
- Capability and performance indices Cp/ Cpk, Pp/Ppk, Cm/Cmk, and
- Attribute capability

After attending the course, process control practitioners will develop the ability to maintain and improve process performance and bring consistency in product/ process quality.

Participants are encouraged to bring their industry specific situations to enable the faculty to guide them on the most suitable SPC techniques.



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COURSE CONTENT

Day-1

- **Introduction to Statistical Process Control**
 - Goal post vs Target approach
 - Voice of process
 - Variation: Common and Special Cause
 - Process behavior: Location, Spread and Shape
 - Basic Statistics for process behavior
 - Normal Distribution

Workshop-1

- **Introduction to control chart**
 - Principle of control Chart
 - Type of Control Charts
 - Variable
 - Attribute
 - Hybrid
 - Preparatory Steps for Control chart
- **Average and Range Control Chart**
 - Precondition
 - Initial data collection
 - Limit Calculation
 - Limit Validation

Workshop-2

- **Process Capability study**
 - Concept of Capability
 - Concept of Cp
 - Cp calculation
 - Limitation of Cp
 - Concept of Cpk
 - Cpk calculation and interpretation

Workshop-3

- **Control chart on going control**
 - 8 rules of interpretation

Home Work



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Day-2

- **Process Performance Study**
 - Pp/Ppk
 - Capability vs Performance
- **Equipment (Machine) Capability**
 - Cm/Cmk
- **Concept of sub-grouping strategy and Rational Sub Grouping**
- **Individual and Moving Range Control Chart**
 - Precondition
 - Initial data collection
 - Limit Calculation
 - Limit Validation
 - Capability study
 - Ongoing control and interpretation

Workshop-4

- **Attribute Control Chart (p & np)**
 - Precondition
 - Initial data collection
 - Limit Calculation
 - Limit Validation
 - Capability study
 - Ongoing control and interpretation

Workshop-5

- **Attribute Control Chart (c & u)**
 - Precondition
 - Initial data collection
 - Limit Calculation
 - Limit Validation
 - Capability study
 - Ongoing control and interpretation

Workshop-6

- **Situation and Process Specific* Control Charts**
 - Stop Light
 - Pre Control
 - DNOM chart
 - Standardized X Bar- R
 - Standardized Attribute
 - I-R-MR
 - Zone

Examination

* Continuous process, Batch process, Slow production rate, High within variation process etc...