

Statistical Process Control (SPC) 1 or 2 days

Consistent processes deliver consistent quality.

Statistical Process Control (SPC) uses statistical techniques to monitor and control processes, ensuring they operate efficiently and consistently within defined parameters. Real-time monitoring of process variation identifies deviations from the norm, so timely corrective action can be taken before defects reach the customer.

Alongside SPC, Process Capability measures a process's ability to consistently produce output within specified limits, showing how well it can meet customer requirements. Together they enable organisations to enhance product quality, reduce defects, optimise processes and increase customer satisfaction, whatever the sector.

This practical programme provides the skills to apply SPC and Process Capability, collecting and analysing process data, constructing and interpreting control charts for variable and attribute data, and evaluating process capability using indices such as Cp, Cpk, Pp and Ppk.

What You'll Learn

By the end of this programme, you will be able to:

- Understand the principles and concepts of SPC and the different types of process variation
- Collect and analyse process data effectively for SPC
- Construct SPC charts for variable and attribute data
- Interpret and analyse control charts for process stability
- Understand Process Capability indices (Cp, Cpk, Pp, Ppk) and their significance
- Apply SPC and Process Capability to real-life scenarios and continuous improvement initiatives

Delivery Format

The programme is delivered in-company, either virtually or face-to-face, and can be tailored to align with industry or in-house standards and software. Practitioner training runs over one or two days, depending on the scope of methods to be covered; for international or virtual delivery, the format can be a series of half-day sessions spread over one or more weeks.

Who Should Attend?

This programme is practitioner level and suitable for anyone involved in measuring, managing and improving ongoing processes, including:

- Process managers and engineers responsible for ongoing process performance
- Quality professionals, process owners and operators
- Continuous improvement practitioners such as Lean Six Sigma belts

- Anyone who needs to monitor, control and improve processes (no prerequisites required, though basic numeracy is necessary).

Why Choose This Course?

Participants gain:

- Real-time insight into process variation and stability
- The ability to construct and interpret control charts for variable and attribute data
- Understanding of Process Capability indices (Cp, Cpk, Pp, Ppk) and what they mean for customers
- Practical tools to reduce defects, optimise processes and increase customer satisfaction
- Strategies for implementing SPC and Process Capability within quality management systems
- 8-16 CPD points, depending on preferred course duration, to support professional development

Course Content

This course introduces the fundamentals of Statistical Process Control (SPC) and Process Capability, including their role in monitoring, controlling and improving processes. Participants learn how to apply SPC using a range of practical tools and techniques, including:

- Fundamentals of SPC: core principles, benefits and links to other core quality tools
- Natural (common cause) and special cause variation, and the right response to each
- Planning an SPC and Process Capability study, data collection and probability distributions
- Control charts for variable and attribute data, including SPC for special situations
- Interpretation and analysis for process stability, using the SPC rules for spotting special causes
- Process Capability indices: Cp, Cpk, Pp and Ppk, and their interpretation
- Capability analysis for attribute data and dealing with non-normal data
- Workplace application, integration with quality systems and action planning

Why Choose Catalyst?

Catalyst delivers results, not just services. We blend consulting, coaching, training, and AI-powered tools into a seamless support system that meets teams where they are, developing capability at every level.

Thousands trust us to support their learning and continuous improvement journeys. With over 30 years' experience in performance improvement training and consultancy, we make complex concepts practical, accessible, and engaging. Our short courses in quality and improvement tools are designed by experienced practitioners, ensuring content that is relevant and immediately applicable. We combine deep expertise with interactive delivery to help participants confidently apply what they learn. Catalyst is accredited by the British Quality Foundation and the Lean Competency System (LCS), and is recommended by the Chartered Quality Institute.