Statistical Process Control (SPC) Training Course

Professional Development Training Course Outline

Category	General Training	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today’s highly competitive manufacturing and service industries, quality excellence and process optimization are no longer optional they are critical for business sustainability. Statistical Process Control (SPC) empowers organizations to monitor, control, and improve processes through data-driven decision-making, reducing variability and enhancing product consistency. Statistical Process Control (SPC) Training Course equips professionals with the essential tools and techniques to identify process deviations, implement corrective actions, and foster a culture of continuous improvement using proven SPC methodologies.

Through a combination of practical exercises, real-world case studies, and interactive workshops, participants will gain expertise in control charts, process capability analysis, and root cause identification. The course emphasizes hands-on learning, enabling attendees to immediately apply SPC concepts to their operational environment. By mastering these techniques, professionals can contribute to operational efficiency, defect reduction, and customer satisfaction, aligning their organization with global quality standards and industry best practices.

Programme Curriculum

Statistical Process Control (SPC) Training Course

Introduction

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Course Duration

5 days

Course Objectives

1. Understand the fundamentals of Statistical Process Control (SPC) and its role in quality management.
2. Learn to implement control charts for monitoring process stability and variation.
3. Analyze process capability using Cp, Cpk, Pp, Ppk indices.
4. Identify and address common cause and special cause variations effectively.
5. Utilize real-time data analytics for continuous process improvement.
6. Apply root cause analysis techniques to reduce defects and enhance quality.
7. Implement Six Sigma principles with SPC for process optimization.
8. Improve productivity and operational efficiency through data-driven decisions.
9. Understand measurement system analysis (MSA) and data integrity standards.
10. Conduct risk assessment and process audits for quality assurance.
11. Develop visual management tools for process monitoring and reporting.
12. Integrate SPC with Lean manufacturing to minimize waste and improve cycle time.
13. Drive business excellence through statistical methods, predictive analytics, and quality leadership.

Target Audience

1. Quality Engineers
2. Process Engineers
3. Production Managers
4. Manufacturing Supervisors
5. Lean Six Sigma Practitioners
6. Operations Managers
7. Supply Chain Professionals
8. Continuous Improvement Specialists

Course Modules

Module 1: Introduction to SPC

- Importance of SPC in modern industries
- Key concepts-variation, control, and quality
- Overview of data collection techniques
- Difference between common cause and special cause variation
- Case Study: Implementing SPC in a manufacturing line

Module 2: Control Charts

- Introduction to X-bar, R, and S charts
- Attribute charts: p, np, c, and u

- Interpreting control limits and trends
- Hands-on chart plotting exercises
- Case Study: Reducing defects in assembly operations

Module 3: Process Capability Analysis

- Understanding Cp, Cpk, Pp, and Ppk
- Benchmarking process performance
- Identifying process improvement opportunities
- Tools for capability reporting
- Case Study: Improving production yield in electronics

Module 4: Data Collection & Measurement System Analysis

- Data types and sampling methods
- Ensuring accuracy and precision
- Gauge R&R studies
- Reducing measurement errors
- Case Study: Enhancing quality in automotive inspection

Module 5: Root Cause Analysis (RCA)

- Techniques-5 Whys, Fishbone, FMEA
- Linking RCA to process improvements
- Corrective and preventive actions
- Real-time problem-solving exercises
- Case Study: Identifying bottlenecks in food production

Module 6: SPC in Lean & Six Sigma

- Integrating SPC with Lean principles
- Supporting DMAIC projects
- Waste reduction through variation control
- Tools for continuous improvement culture
- Case Study: Lean-Six Sigma project in packaging

Module 7: Advanced SPC Tools

- Multivariate SPC techniques
- Process trend analysis
- Predictive analytics for quality forecasting
- Statistical software applications
- Case Study: Forecasting defects in semiconductor manufacturing

Module 8: Implementation & Sustainability

- Developing an SPC deployment roadmap
- Training and employee engagement strategies
- Continuous monitoring with dashboards and KPIs
- Sustaining long-term process improvements
- Case Study: SPC rollout across multiple production plants

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com