Control Charts & Quality Tools (SPC) Training Course

Professional Development Training Course Outline

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

Course Introduction

In today’s competitive business environment, delivering high-quality products and services is critical for organizational success. Control Charts & Quality Tools (SPC) Training Course provides practical methodologies to monitor, measure, and improve process performance, ensuring operational excellence. This training course emphasizes data-driven decision-making, process variation reduction, and defect prevention strategies. Participants will gain hands-on experience in using advanced control charts, quality tools, and analytical techniques to enhance production efficiency and ensure compliance with industry standards.

Organizations adopting SPC principles can expect increased productivity, reduced waste, improved customer satisfaction, and sustained profitability. By leveraging statistical methods and control charts, businesses can proactively detect anomalies, implement corrective measures, and optimize processes. This course integrates real-world case studies, practical exercises, and industry-best practices to equip professionals with the essential skills to manage quality effectively and support continuous improvement initiatives.

Programme Curriculum

Control Charts & Quality Tools (SPC) Training Course

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Course Objectives

1. Understand the fundamentals of Statistical Process Control (SPC) and control chart theory.
2. Learn how to identify process variation and differentiate between common and special causes.
3. Master the construction and interpretation of X-bar, R, p, and c charts.
4. Apply control charts to monitor manufacturing and service processes.
5. Utilize quality tools such as Pareto charts, histograms, and cause-and-effect diagrams.
6. Enhance problem-solving capabilities using data-driven analysis.
7. Implement process improvement strategies to reduce defects and variability.
8. Integrate SPC with Lean Six Sigma initiatives for operational excellence.
9. Analyze real-time process data to make informed business decisions.
10. Develop skills to conduct effective process audits and quality assessments.
11. Promote a culture of continuous improvement within teams and departments.
12. Apply SPC techniques to project management and supply chain operations.
13. Evaluate organizational performance using statistical metrics and dashboards.

Organizational Benefits

- Improve operational efficiency and reduce process downtime.
- Minimize production defects and enhance product quality.
- Increase customer satisfaction and brand reputation.
- Streamline workflow processes with data-driven insights.
- Strengthen compliance with industry quality standards.
- Enhance employee problem-solving and analytical skills.
- Foster collaboration across cross-functional teams.
- Reduce operational costs through waste minimization.
- Support Lean Six Sigma and continuous improvement initiatives.
- Develop leadership capabilities in quality management.

Target Audiences

- Quality Assurance Managers
- Production Supervisors
- Process Engineers
- Continuous Improvement Specialists
- Operations Managers
- Manufacturing Team Leaders
- Project Managers
- Supply Chain Professionals

Course Duration: 5 days

Course Modules

Module 1: Introduction to Statistical Process Control

- Overview of SPC principles and benefits
- Types of process variation
- Understanding quality metrics
- Selecting key process indicators
- Case Study: SPC implementation in manufacturing
- Hands-on exercises on data collection

Module 2: Control Charts Fundamentals

- X-bar and R charts
- p and c charts
- Identifying control limits
- Detecting process anomalies
- Case Study: Reducing defects in automotive assembly
- Practical charting exercises

Module 3: Process Variation Analysis

- Common vs. special causes
- Root cause identification
- Data-driven problem solving
- Process capability assessment

- Case Study: Process improvement in a chemical plant
- Exercises on variation analysis

Module 4: Advanced Control Chart Techniques

- Moving average and cumulative charts
- Individual/moving range charts
- Analyzing trends and patterns
- Signal detection and interpretation
- Case Study: Quality monitoring in electronics production
- Hands-on chart construction

Module 5: Quality Tools Integration

- Pareto charts
- Fishbone diagrams
- Histograms and scatter plots
- Check sheets for data collection
- Case Study: Reducing customer complaints in a service firm
- Practical exercises using quality tools

Module 6: Process Improvement Strategies

- Lean principles and SPC
- DMAIC approach integration
- Defect reduction methods
- Continuous improvement planning
- Case Study: Lean Six Sigma in healthcare processes
- Group problem-solving activities

Module 7: Data-Driven Decision Making

- Real-time data monitoring
- Statistical dashboards and reports
- Key performance metrics
- Decision-making frameworks
- Case Study: Improving supply chain efficiency

- Interactive data analysis exercises

Module 8: SPC Implementation & Organizational Benefits

- Developing SPC culture
- Training and skill development
- Sustaining process improvements
- Reporting and compliance tracking
- Case Study: SPC adoption in a multinational company
- Action plan development

Training Methodology

- Interactive lectures and presentations
- Hands-on exercises and simulations
- Group discussions and brainstorming sessions
- Case study analysis with real-world examples
- Role-playing and scenario-based learning

Quizzes and knowledge checks

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
07 Sep 2026	11 Sep 2026	Physical	$1,500
14 Sep 2026	18 Sep 2026	Physical	$1,500
21 Sep 2026	25 Sep 2026	Physical	$1,500
28 Sep 2026	02 Oct 2026	Physical	$1,500
05 Oct 2026	09 Oct 2026	Physical	$1,500
12 Oct 2026	16 Oct 2026	Physical	$1,500
19 Oct 2026	23 Oct 2026	Physical	$1,500
26 Oct 2026	30 Oct 2026	Physical	$1,500

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