

Training Course Data Sheet	
PME231 <b>Aspen Real-Time SPC:                      Using and Configuring (Aspen Q)</b>	Course Number: <b>PME231</b>
	Duration: <b>2 days</b>
	CEUs Awarded: <b>1.4</b>
	Level: <b>Intermediate</b>

<p><b>Former Course Title/Number</b></p> <ul style="list-style-type: none"> <li>This course was previously known as Introduction to SPC Using Aspen Q, Course MM460</li> </ul> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>Become aware of the competitive advantage which the Aspen Q SPC (Statistical Process Control) product can bring to your enterprise</li> <li>Implement an SPC system, which integrates tightly with Aspen InfoPlus.21™ real time database enabling real-time quality control</li> <li>Understand an existing Aspen Q installation in order to maintain, extend, or supervise its application</li> <li>Become able to use an installed Aspen Q product to monitor and report on variables that influence product quality</li> </ul> <p><b>Course Benefits</b></p> <ul style="list-style-type: none"> <li>Aspen Q, when properly configured, enables potentially troublesome process trends to be identified at an early stage before they compromise product quality</li> <li>By learning how to correctly configure and use Aspen Q, you can minimize reworked material and improve the quality of finished product</li> <li>Understanding the facilities offered by Aspen Q allows optimal deployment of the product's functionality for each application's requirements</li> </ul> <p><b>Who Should Attend</b></p> <ul style="list-style-type: none"> <li>Process/Product managers</li> <li>Technologists</li> <li>Process/Product Quality Managers</li> <li>Aspen InfoPlus.21 system administrators</li> <li>System Integrators</li> </ul>	<p><b>Approach</b></p> <ul style="list-style-type: none"> <li>Introduce basic SPC and the necessary statistical concepts</li> <li>Learning takes place through a combination of instructor-led PowerPoint presentations, question and answer sessions, demonstrations and hands-on exercises</li> <li>Use Aspen Process Explorer screens to view and understand and control charts based on ad-hoc data from existing and pre-configured Q tags, and to create new Aspen Q tags</li> <li>Explain on-line Control charts as a means of monitoring process quality with hands-on examples. These include Xbar/Range, Xbar/Standard Deviation, EWMA, and CUSUM for continuously variable data</li> <li>Understand the important criteria for selecting an appropriate Aspen Q algorithm</li> <li>Learn how to create, populate and edit Aspen Q tags for Aspen Process Explorer and the System Administration Tool</li> <li>Understand the implementation, use, and customization of quality alarming in Aspen Q</li> <li>Understand and use histograms to analyze data distribution, and use Aspen Q to evaluate process capability</li> <li>Understand how to use and configure Pareto Charts to identify the order of causes of product non-conformity.</li> <li>GCS based functionality is not addressed in this course, since most Aspen Q users now use the Aspen Process Explorer GUI</li> </ul> <p><b>Prerequisites</b></p> <ul style="list-style-type: none"> <li>Overall knowledge of the structure of a typical Aspen InfoPlus.21 database</li> <li>Experience in using Aspen Process Explorer console to select/view displays and plots and enter data</li> <li>Experience in using the Aspen InfoPlus.21 Administrator to create and modify records</li> </ul>
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**PME231 Aspen Real-Time SPC: Using and Configuring (Aspen Q) Course Agenda**

Day 1

Day 2

- Traditional quality control versus SQC versus SPC
  - Introduction to basic SPC concepts
  - Introduction to Aspen's Q SPC tools and overview of how they should be used to improve product quality
  - Navigating Aspen Q screens workshop
  - Overview of Pareto Charts
  - Use Control Charts with ad hoc tags
    - Purpose
    - Ways of organizing data for SPC; samples and Subgroups
    - Subgroup Detailing and Commenting
    - Means and Control Limits
    - Quality Alarms
    - Types of control chart; Xbar, Standard Deviation, Range, CUSUM, EWMA
    - Hands-on exercises using control charts
  - Set parameter options for ad hoc tags in Aspen Process Explorer
  - Use and interpret of Histograms
  - Process Capability Indices Cp, CpK, Pp, PpK, including hands on exercise
  - Auto correlation charts and their uses
  - Convert an ad-hoc tag to a Q tag using Aspen Process Explorer wizard
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- Select an appropriate type of Aspen Q tag
  - Configure the parameters in an Aspen Q tag record that affect
    - Calculation of standard deviation (e.g., use alternative MSSD method)
    - Selection of historical data used
    - Formation and historization of sub-groups
    - Limit calculation basis
    - How alarm rules are applied
    - Review methods of generating Artificial range when data naturally forms a subgroup size of 1
    - Control Chart options
  - Hands-on session configuring an Aspen Q tag using alternative Aspen Process Explorer wizard and using the Aspen System Administration tool
  - Configure the database to perform Subgroup Commenting and Pareto chart building.
  - Aspen Q quality alarm mechanism
    - Review possible configuration options and their uses
    - Customize the alarm rules
    - Apply customized rules to an Aspen Q tag
  - Create Ad Hoc and pre-configured Batch SPC Charts
    - Conversion techniques
    - Explanation of extended capabilities of record based BatchSPC
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