

Training Course Data Sheet	
<h1>Automated Plant Testing Using Aspen SmartStep™</h1>	Course Number: MA315
	Duration: 3 days
	CEUs Awarded: 2.1
	Level: Advanced

<p>Objectives</p> <ul style="list-style-type: none"> Understand the basic technical reasons why a properly-designed automated test will deliver higher-quality data than that attainable from a fully supervised test Understand how to design and carry out a successful automated plant test Understand the differences between the “traditional” project approach and AspenTech’s Rapid Application Deployment (RAD) methodology <p>Course Benefits</p> <ul style="list-style-type: none"> Expertise gained in this course will allow customers to upgrade their existing controllers in a timely fashion to ensure that control benefits are maintained over the long term Customers are exposed to AspenTech’s RAD methodology and how it can be used on a grass-roots project by a customer wishing to perform their own new Aspen DMCplus® project to more quickly realize an economic benefit <p>Who Should Attend</p> <ul style="list-style-type: none"> Engineers who are maintaining existing Aspen DMCplus controllers Engineers who plan to implement new Aspen DMCplus controllers 	<p>Approach</p> <ul style="list-style-type: none"> Instructor-led course with plenty of opportunity for student questions Short lecture sessions using animated PowerPoint presentations reinforced by hands-on laboratory sessions Use Windows-based Aspen SmartStep Desktop software to perform configuration and off-line simulation of Aspen SmartStep tester applications Use Aspen SmartStep Online software to set up data collection and extraction during the Aspen SmartStep test Use the Production Control Web interface software to monitor an ongoing Aspen SmartStep test Hands-on exercises allow the Aspen SmartStep technology to be applied to typical plant processes A manual containing printouts of all course slides, together with lab exercises A set of concept review quizzes and corresponding answer keys, with instructor-led review of the quiz contents <p>Prerequisites</p> <ul style="list-style-type: none"> A background in chemical process engineering and/or process operations Experience with at least one or two Aspen DMCplus projects Must have attended the ‘Introduction to MPC using Aspen DMCplus’ training course <p>Suggested Subsequent Courses</p> <ul style="list-style-type: none"> Aspen Watch™ for Aspen DMCplus Performance Improvement
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Automated Plant Testing with Aspen SmartStep™ Course Agenda

Day 1

- Product positioning within the Advanced Control family
- Model requirements for multivariable predictive control (MPC)

Day 3

- On-line laboratory exercise to conduct a full Aspen SmartStep test using simulated plant environment with model mismatches on both model gains and dynamics

- Why Aspen SmartStep was developed
 - Processes that are good candidates for Aspen SmartStep
 - Aspen SmartStep software configuration
 - Introduction to Aspen SmartStep terminology
 - Definition of testing modes
 - Definition of key parameters
 - Using the lab interface
 - Co-linearities: using paired MVs
 - Use Aspen SmartStep Desktop
 - Aspen SmartStep Config
 - Aspen SmartStep Simulate
 - Lab exercise: Using Aspen SmartStep Simulate
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- Observe REPOSITION mode
 - Observe correcting moves
 - Use Aspen DMCplus Model to improve the Aspen SmartStep tester model
 - On-line reload of a new controller model
 - Retune the Aspen SmartStep tester
 - Convergence Stress Testing in "Control" Mode
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Day 2

- Aspen SmartStep Online Interface
 - Aspen SmartStep Collect
 - Aspen SmartStep Extract
 - Aspen SmartStep Manage
 - Production Control Web Interface for Aspen SmartStep Testers
 - Rapid Application Deployment (RAD)
 - "Waterfall" Project Approach vs. RAD Project Approach
 - Testing Methodology
 - Pre-Commissioning Activities
 - Convergence Stress Testing
 - Lab exercise: Configuring an Aspen SmartStep Tester and using Aspen SmartStep Simulate
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