DeltaV Distributed Control System

LEARNINGPATH

Course Level Identifier = P - Primer / C - Core Competency / A - Additional Competency

Course Number	Course Name	Plant Engineers	Maintenance Technicians	Plant Operators	Control System Administrators	Plant Management
5590	Power Quality and Grounding for Electronic Systems		A			
7009	DeltaV Implmentation I	C	A		C	
7012 / e7012	DeltaV Operator Interface for Continuous Control			C		A
7014 / e7014	DeltaV Operator Interface for Batch Control			C		A
7016	DeltaV Systems Batch Implmentation	C				
7017	DeltaV Implmentation II	A				
7018	DeltaV Hardware & Troubleshooting	A	C		A	
e7020	AMS Intelligent Device Manager Overview	A	A			A
7025	DeltaV Advanced Graphics	A				
7027	DeltaV Systems Administration for Windows 7 & Server 2008				C	
7029	DeltaV Virtualization				A	
7030	Fieldbus Devices		A			
7032	Fieldbus Systems and Devices	A	A			
7037	Communication Interfaces with the DeltaV System					
7039	AMS Device Manager with DeltaV	A	C			
e7044	Batch Analytics Operator			A		
e7045	DeltaV Analyze Features Training	A				A
e7046	Batch Analytics Model Builder	A				
7101	PlantWeb/DeltaV Introduction	P	P		P	C
7201	DeltaV Advanced Control	A				
7201C	DeltaV Insight	A				
7202	DeltaV Model Predictive Control	A				
7303	DeltaV Safety Instrumented Systems with SLS Maintenance		A			
7304	DeltaV Safety Instrumented Systems with Electronic Marshalling Maintenance		A			
7305	DeltaV SIS Implmenetation	A				
9025	Control Loop Foundation	P	P			P
eDVS23	Installing DeltaV Virtual Studio 2.3				A	

PlantWeb/DeltaV Introduction

Course 7101 CEUs: 2.1

Overview

This course is for plant managers, process and process control engineers, and maintenance personnel needing an introduction to how the PlantWeb technology is utilized in basic process control systems and safety systems.

Students will perform basic workstation operations including accessing displays, accessing faceplates, accessing modules to make process changes, responding to alarms and observing/changing tunable configuration parameters. Students who complete this 3-day course will be able to:

- use and apply PlantWeb terminology and acronyms
- identify DeltaV Explorer components
- define the different types of downloads
- commission and download a controller
- identify DeltaV Operate functionality
- operate a process using faceplates, detail displays, and primary control displays using DeltaV Operate
- define the Foundation™ Fieldbus technology terminology
- view device alerts using AMS Suite: Intelligent Device Manager
- define the DeltaV SIS architecture

Prerequisites

None.

Topics

- DeltaV System Description
- DeltaV Hardware
- Engineering Application
- Operation & Maintenance
- Alarm Management
- Security
- Bus Architecture
- Safety Life Cycle
- DeltaV SIS Overview
- Data Integration
- Batch

DeltaV Implementation I

Course 7009 CEUs: 3.2

Overview

This course is designed for process & process control engineers responsible for obtaining key production data, maintaining, configuring and troubleshooting a DeltaV system.

During the 4-1/2 day course, the student will be able to define system capabilities, define nodes, configure continuous and sequential control strategies, create process alarms, operate the system, troubleshoot the system and modify operator displays.

This course includes access to a virtual DeltaV system to practice and review course workshops complete with brief recorded demonstrations available after course completion.

Prerequisites

Microsoft Windows experience. Prospective attendees lacking process control experience should first attend Control Loop Foundation, Course 9025. Prospective attendees new to DeltaV should first attend PlantWeb/DeltaV Introduction, Course 7101, or DeltaV Hardware & Troubleshooting, Course 7018.

Topics

- System Overview
- DeltaV Explorer
- DeltaV Diagnostics
- Control Modules
- Control Studio
- Motor Control with Interlocking and Permissive Conditions
- Cascade Control
- Regulatory Control
- DeltaV Operate
- System Operation
- Alarms & Process History View
- Alarm Help
- Sequential Function Charts
- Configure Theme Dynamos
- Electronic Marshalling (CHARMS)

DeltaV Systems Batch Implementation

Course 7016 CEUs: 3.2

Overview

This course is designed for individuals responsible for configuring and commissioning DeltaV Batch software.

This 4-1/2 day course covers the implementation of a complete batch application. A process simulator will provide a batch application. Students will use DeltaV Batch software to configure recipe entities including, Aliasing, Equipment Trains, Dynamic Unit Allocation, Phase Logic, Operations and Unit Procedures. Equipment entities will also be configured including, Units modules and Process cells.

Prerequisites Course 7009, DeltaV Implementation I

Topics

- Batch Overview
- Unit Phase
- Alias Definition
- Unit Module
- Process Cell
- Class Based Control Modules
- Class Based Equipment Modules
- Operation
- Unit Procedure
- Procedure
- Equipment Trains
- Unit Aliasing
- Dynamic Unit Allocation

For DeltaV training information please refer to the appropriate contact on page 118.
For regional training center contacts refer to pages 116-117.
Visit: www.emersonprocess.com/education for current dates, locations and enrollments.

DeltaV Implementation II

Course 7017/V CEUs: 3.2

Overview

This course is for process control engineers responsible for designing, implementing and testing configuration using the DeltaV system.

During the 4-1/2 day course, the student will be able to identify function block structures, interpret function block status values, design error masking, define nodes, configure modules using State-Driven & Command-Driven algorithms, configure modules with Analog Control Palette Blocks and create simulation for testing purposes.

Prerequisites

Course 7009, DeltaV Implementation I

Topics

- Function Block Structures & Status Values
- Analog Control Palette Blocks – Bias/Gain, Deadtime, Limit, Ratio, Signal Characterizer, Splitter
- HART Inputs and Outputs
- HART Device Alarms
- AMS Intelligent Device Manager
- Unit Alarms
- DeltaV Tune with InSight
- Device Control Options
- Class Based Control Modules

DeltaV Advanced Graphics

Course 7025/V CEUs: 3.2

Overview

This 4-1/2 day course is for process control engineers responsible for configuring advanced functionality in the DeltaV user interface. This course expands on graphic topics covered in both the DeltaV Implementation course 7009 and DeltaV Implementation II course 7017.

Prerequisites

Course 7009, DeltaV Implementation I

Topics

- Visual Basic Primer
- Forms
- Modules
- Schedules
- User Preferences
- Picture Sizing
- Environment Customization
- Custom Faceplates
- Function Block Faceplates
- FRS Functions
- Pop Up Menus
- Color Threshold Tables
- Custom Dynamos
- Tag Groups
- Key Macro Editor
- Theme Dynamos

eLearning: Features Training on DeltaV Analyze 2.0

Course e7045 CEUs: .2

Overview

This course is for personnel who will be using DeltaV Analyze in their alarm management program. This on-line course includes audio presentations, quizzes, and up to a four hour access to DeltaV Analyze. To obtain hands on experience, e7045 students will have four hour access to DeltaV Analyze over a two week timeframe.

Topics

- DeltaV Analyze Overview
- DeltaV Analyze Administration Features
- How to Create a Bookmark
- How to Create an Alarm Statistics Report

www.emersonprocess.com/education

Note: Course access is 12 months

Virtual CLASSROOM

Virtual Classroom Available
Introducing Virtual Classroom, details on page 3. Courses can be arranged to fit your schedule.

On-Site Training can also be scheduled in your area or at your site. Please call to discuss options at 800-338-8158 or 641-754-3771.

DeltaV Advanced Control

Course 7201/V CEUs: 3.2

Overview

This 4-1/2 day course introduces students to the advanced control tools available within DeltaV and how they may be used to improve plant operations. The principal technology that is utilized in each product will be discussed. The areas of improvement that may be achieved will be detailed. Also, each student will gain hands on experience with these tools in class exercises based on realistic process simulations.

Prerequisites

Courses 7101, PlantWeb/DeltaV Intro. or 7009, DeltaV Implementation I or equivalent field experience.

Topics

- The Control Foundation in DeltaV
  - Traditional Tools e.g. Override, Cascade, Ratio
  - Improvements Provided by Advanced Control
- DeltaV Inspect with InSight
  - Detection of Abnormal Conditions
  - Performance Indices
  - Performance Reports
- DeltaV Tune with InSight
  - Tuning Response
  - Process Learning
  - Adaptive Tuning
  - Adaptive Control
- DeltaV Fuzzy
  - Principles of Logic Control
  - FLC Function Block, Tuning
- DeltaV Predict
  - MPC for Multi-Variable Control
  - Model Identification, Data Screening
  - Simulation of Response, Tuning
- DeltaV Neural
  - Creation of Virtual Sensor
  - Data Screening, Training
- DeltaV Simulate Suite
  - Process Simulation
  - Simulate Pro

Virtual Training Available, Call to Schedule.

DeltaV Model Predictive Control

Course 7202/V CEUs: 2.1

Overview

This 3-day course is designed for process and control engineers who are applying DeltaV Model Predictive Controls capabilities. It provides practical examples of how to determine the benefits of MPC application and how this control may be used to meet specific application requirements. Students will gain hands on experience through lab exercises based on realistic dynamic process simulations.

Prerequisites

DeltaV Advanced Control, Course 7201.

Topics

- How to Justify an MPC Project
  - Evaluating the Cost of Process Variation
  - Estimating the Reduction in Variation that is Possible Using MPC
  - Calculating the Benefit of Maximizing Throughput When Plant Production is Restricted by Input Limits or Measurable Constraint
- Meeting Application Requirements
  - Insuring Disturbance Inputs are Independent of Other Process Inputs
  - Meeting Control Requirements when the Response Times are Very Different
  - Understanding the Design and Testing of an Integrating Process
- Tailoring Control Performance
  - Placing more Emphasis on Selected Control or Constraint Parameters
  - Improving Control Performance when the Process is Deadtime Dominant
  - Compensating for Large Changes in Process Gain or Dynamics
  - Minimizing the Impact of Process Noise on Control Performance
- MPC Application
  - Selecting and Applying MPC, MPC-Pro and MPC-Plus Blocks
- Optimizing Control
  - Optimizing the Control Using the MPC-Pro or MPC-Plus Blocks

Virtual Training Available, Call to Schedule.

eLearning: Batch Analytics Model Building

Course e7046 CEUs:.8

Overview This course is designed Chemometricians, Process Engineers, Quality Engineers, and Process Control Engineers. This 8-hour (average duration) on-line course provides an orientation of Batch Analytics Model Builder. The course includes audio presentations, demonstrations, hands-on practices, hands-on workshops, and quizzes. Upon completion of this course, the student will be able to:

- define basic principles of Batch Data Analytics and their use in fault detection and quality parameter prediction
- use the Batch Data Analytics Model Builder application to build and deploy a project for fault detection and quality parameter prediction
- users will be able to recognize and navi gate the screens needed to build a model in Batch Analytics
- users need to define batch logic, stage logic, and initial condition logic needed for model development
- users will be able to interpret analytic data of the Model Builder application using a saline example
- users will be able to build a Batch Data Analytics model

Prerequisites DeltaV Batch experience and Microsoft Windows experience is required. Statistical/Quality background would be beneficial.

Topics

- Batch Analytics Overview
- Batch Analytics Model Builder Overview
- Batch Analytics Viewer Overview
- Batch Saline Simulation
- Benefits of Using Batch Analytics
- Batch Analytics Manager Administration
- Batch Logic, Stage Logic, and Initial Logic Required to Build a Model
- Batch Analytics Model Builder - Equipment
- Batch Analytics Model Builder - Product
- Batch Analytics Model Builder – Model

www.emersonprocess.com/education
Note: Course access is 12 months

For DeltaV training information please refer to the appropriate contact on page 118.
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DeltaV SIS Implementation

Course 7305/V CEUs: 3.2

Overview

This course is for personnel who design, implement, commission and service DeltaV SIS.

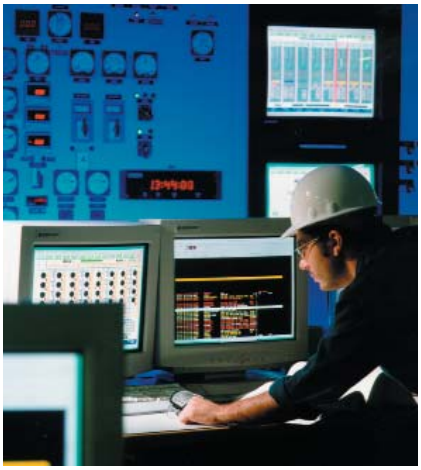
This 4-1/2 day course is a hands-on instructor led course. The course covers complete DeltaV SIS Implementation including hardware and software architecture. Students will be able to design a DeltaV SIS Network and Safety Instrumented Functions (SIFs). Additionally, students will be able to configure smart SIS instruments and their associated alerts, including partial stroke testing.

Prerequisites

Course 7009 is a requirement. Recommend IEC 61511 knowledge.

Topics

- DeltaV SIS Overview
- DeltaV SIS SLS 1508 Hardware Architecture
- DeltaV SIS with Electronic Marshalling Hardware Architecture
- DeltaV Safety Instrumented Functions
- Rosemount SIS Instruments Security
- AMS Device Manager relating to DeltaV SIS
- DeltaV SIS Fisher SIS Digital Valve Controllers
- SISNet Repeaters
- DeltaV SIS Security
- DeltaV Version Control
- Local Safety Network Bridges



DeltaV Systems Administration - Windows 7/Server 2008

Course 7027 CEUs: 3.2

Overview

This 4-1/2 day course is designed for control system administrators, process control engineers and IT specialist responsible for managing, installing, and commissioning a DeltaV system running on the Windows 7 operating system and Windows Server 2008.

Prerequisites

Course 7009, DeltaV Implementation I, or Course 7018, DeltaV Hardware and Troubleshooting.

The purchase of this course includes access to the eDVS23 course at no extra charge. Upon confirmed enrollment, the student will receive access to the eDVS23 online course (via email) to take at any time.

Topics

- Overview/Review of System Components and Topologies
- DeltaV Licenses
- Database Administration
- User Administration
- Network Node Diagnostics
- Auto Update Service
- Cybersecurity Tools – Smart Firewall, Controller Firewall, Smart Switches
- Installation Checklist of the Windows 7 and Windows Server 2008 Operating Systems
- Installation of the DeltaV Software and AMS Device Manager Components
- DeltaV Control Networks and Remote Access
- DeltaV Domains and Workgroups
- Network Security
- Upgrading Hardware and Software
- Backup and Restore Procedures
- Importing/Exporting
- DeltaV Zones

DeltaV Virtualization

Course7029 NEW CEUs: 3.2

This course is designed for system administrators responsible for installing and maintaining DeltaV Workstations on a virtual platform.

Overview

This 4-1/2 day course focuses on the installation, configuration and system administration of a virtualized DeltaV distributed control system. Using a combination of lectures and workshops students will learn skill sets that enable them to properly plan, implement and maintain a robust DeltaV Virtual Studio (DVS) system intended for online (production) use. A key objective of this course is to prepare students for all aspects of owning a DVS system with special emphasis on providing highly available, reliable and secure access for end users of the DVS system.

The purchase of this course includes access to the eDVS23 course at no extra charge. Upon confirmed enrollment, the student will receive access to the eDVS23 online course (via email) to take at any time.

Prerequisites

Course 7027, DeltaV Systems Administration for Windows 7 and Server 2008

Topics

- Virtualization Primer – Basics of How Virtualization Works
- Overview of DeltaV Virtualization Solutions
- Planning a DeltaV Virtual Studio System
- Installing and Configuring a VRTX Chassis and Blade Servers
- Creating DeltaV Virtual Machines including a ProfessionalPlus Node
- Configuring a WYSE Thin Client and Redundant Thin Client Networks
- Create a Highly Available Failover Cluster
- Patching and Hardening of Cluster Nodes
- Cluster Health Monitoring and Troubleshooting
- Disaster Recovery and Replication
- Upgrading and Capacity Expansion

www.emersonprocess.com/education

Note: Course access is 12 months

For DeltaV training information please refer to the appropriate contact on page 118.
For regional training center contacts refer to pages 116-117.
Visit: www.emersonprocess.com/education for current dates, locations and enrollments.

eLearning: Installing DeltaV Virtual Studio 2.3

Course eDVS23 CEUs:.1

Overview

This course is designed for control system administrators, IT administrators, or any other personnel installing DeltaV Virtual Studio 2.3.

This 1 hour (average duration) on-line course shows the process of installing a DeltaV Virtualization (DeltaV Virtual Studio 2.3) solution. This video is not intended to be a video installation manual, but does attempt to show important installation details to the viewer. Viewers are encouraged to have a copy of the DeltaV Virtualization Planning and Installation guide when watching the video to better follow and understand the methods and procedures in completing a DeltaV Virtualization installation. The latest DeltaV Virtualization system planning and installation documentation should be available through the Emerson Guardian and Foundation Support website.

Prerequisites

Control System/IT administration experience.

Topics

Upon completion of this course, the student will be able to identify the various installation steps including:

- Installing Windows Server 2012
- Installing Microsoft Hyper-V Server 2012
- Creating a Domain in Server 2012
- Installing the Required Software Components
- Using the Automated Configuration Tools to Configure the Storage Area Network Device, or SAN Device, and Create a Failover Cluster
- Creating a virtualized ProfessionalPLUS
- Using a USB to Network device for the DeltaV Dongle
- Creating a DeltaV Operator Station

www.emersonprocess.com/education

Note: Course access is 12 months

AMS Device Manager with DeltaV

Course 7039 CEUs:3.2

Overview

This 4-1/2 day course is for instrumentation technicians responsible for all areas of managing and ensuring the reliability of instrumentation in the plant process including startup and commissioning, normal operations, maintenance, and troubleshooting. The target audience usually does the following:

- responds to work orders created to calibrate, troubleshoot, repair, service, and replace instruments and valves
- monitors alerts to preemptively address problems prior to operators seeing a problem in the control room
- provides loop testing and assistance with instrumentation on plant turnarounds, start ups, and for project work
- improves process availability and reduces operations and maintenance costs

The hands-on workshops with AMS Device Manager 13.5 along with DeltaV v13.3.1 will address areas relating to the instrument technician's daily tasks.

Prerequisites Microsoft windows experience. Prospective attendees should first complete the eLearning e7020 AMS Device Manager Suite Primer. The purchase of this course includes access to the e7020 course at no extra charge. Upon confirmed enrollment, the student will receive access to the e7020 online course (via email) to take as a prerequisite prior to attending the instructor led course.

Topics

- DeltaV and PlantWeb Overview
- AMS Device Manager Overview
- Foundation fieldbus Overview
- ValveLink SNAP-ON Introduction
- ValveLink DVC Setup
- HART Overview
- PROCONEX QuickCheck SNAP-ON
- PROFIBUS Overview
- Wireless SNAP-ON Introduction
- PlantWeb Alerts
- AMS Device Manager User Interface
- AMS Device Manager Help
- AMS Device Manager Plant Location Hierarchy
- AMS Device Manager Browser
- Monitoring System Alerts with AMS Device Manager
- PROCONEX AlertTrack SNAP-ON
- Device Replacement for HART, Fieldbus, and PROFIBUS Devices
- AMS Device Manager Audit Trail
- ValveLink SNAP-ON Tests and Diagnostics
- AMS Device Manager Calibration Assistant

Power Quality and Grounding for Electronic Systems

Course 5590 CEUs: 1.4

Overview

This 2-day course is designed for personnel involved with the planning, installation and maintenance of DeltaV digital automation system and provides essential knowledge regarding the power and grounding system for DeltaV equipment.

This course focuses on specific power and grounding requirements of a control system. You will learn:

- how to conduct site verifications
- how to audit using "hands-on" testing labs
- to detect power and grounding problems on existing sites

Prerequisites

A working knowledge of electronics and AC power basics is required.

Topics

- Review of Power Basics
- Power System Measurements
- Low Voltage Power Systems
- Power System Grounding
- Earthing vs. Grounding
- Connection to Earth
- Equipment Grounding
- Code Requirements
- Building Power Distribution
- Feeders and Branch Circuits
- Separately Derived Systems
- Power & Grounding for the DeltaV System
- Single Point Grounding
- Isolated Ground Installations
- Dedicated Circuits
- DC Grounding
- Verifying New Installations
- Power Quality Problems
- Applying Power Conditioning
- SIS Power and Grounding Installation
- Intrinsic Safety Devices

DeltaV Hardware & Troubleshooting

Course 7018 CEUs: 2.8

Overview

This course is recommended for instrumentation and maintenance technicians, managers, and configuration engineers who need to know about DeltaV hardware. It provides an overview of the DeltaV Control Network, M- and S-series hardware, and software applications. Upon completion, you will be familiar with the hardware and be able to perform troubleshooting techniques.

This 4-day course focuses on the hardware components that make up the DeltaV system: M-series controllers and I/O, S-series controllers and I/O (including CHARMs), and DeltaV Smart Switches. Using a combination of lectures and workshops, you will learn how to use operator and diagnostic tools to identify and locate hardware-related fault conditions. Workshops provide the opportunity to disassemble and reassemble the M- and S-series hardware and return the system to an operating state.

If your systems include bus technologies such as Foundation Fieldbus, we recommend courses 7030, 7032, or 7037. The 7018 course satisfies the prerequisite requirement for these bus course (except 7032).

Prerequisites Windows Experience

Topics

- DeltaV Overview
- Operator Alarms
- DeltaV Diagnostics
- DeltaV Smart Switches
- DeltaV I/O Cards and Carriers
- Controllers and Power Supplies
- Electronic Marshalling (CHARMs)
- HART I/O
- DeltaV and AMS Suite Intelligent Device Manager
- Redundant I/O

Fieldbus Devices

Course 7030 CEUs: 2.8

Overview

This 4-day lecture/lab course provides maximum hands-on experience working with FOUNDATION fieldbus instruments such as: the FIELDVUE® Digital Valve Controller, Rosemount Pressure and Temperature Transmitters. The student will use the DeltaV control system to commission fieldbus devices, assign foundation fieldbus function blocks to field devices, troubleshoot using diagnostics and AMS Device Manager to manipulate device parameters.

This course is for individuals responsible for maintaining, troubleshooting, calibrating, and modifying FOUNDATION™ fieldbus device parameters.

Prerequisites

7009 DeltaV Implementation I or 7018 DeltaV Hardware Installation and Troubleshooting.

Topics

- FOUNDATION™ fieldbus Overview
- Fieldbus Physical Layer
- Wiring and Installation
- DeltaV Overview
- Assembling an H1 Segment
- PlantWeb Alerts
- Device Commissioning
- Device Replacement
- Segment Expansion
- Handheld Communicator
- AMS Device Manager Overview
- AMS ValveLink SNAP-ON
- System Troubleshooting

Fieldbus Systems and Devices

Course 7032 CEUs: 2.8

Overview

This 4-day lecture/lab course provides maximum hands-on experience working with FOUNDATION fieldbus instruments such as: the FIELDVUE® Digital Valve Controller, Rosemount Pressure and Temperature Transmitters. The student will use the DeltaV control system to commission fieldbus devices, assign foundation fieldbus function blocks to field devices, troubleshoot using diagnostics and AMS Device Manager to manipulate device parameters.

This course is for individuals responsible for maintaining, troubleshooting, calibrating, and modifying FOUNDATION™ fieldbus device parameters.

Prerequisites

7009 DeltaV Implementation I or 7018 DeltaV Hardware Installation and Troubleshooting.

Topics

- FOUNDATION™ fieldbus Overview
- Macro Cycle Execution
- Fieldbus Function Blocks
- Control Anywhere
- Fieldbus Wiring and Installation
- Segment Checkout Procedures
- Commissioning and Configuring Devices
- Control Strategy Configuration
- PlantWeb Alerts
- Configuring an Operator Display

Communication Interfaces with the DeltaV™ System

Course 7037 CEUs: 2.5

Overview
This 3-1/2 day course covers the integration of fieldbus compliant devices using DeltaV systems. Upon completion of the course the student will be able to install, configure and verify proper operations of AS-i, Profibus DP, DeviceNet, Serial, EtherNet IP, and Wireless HART; including proper wiring practices. The AMS Intelligent Device Manager will be used to interrogate PROFIBUS DP and Wireless HART devices. The target audience usually does the following:

- responds to work orders created to calibrate, troubleshoot, repair, service, and replace instruments and valves
- monitors alerts to preemptively address problems prior to operators seeing a problem in the control room
- provides loop testing and assistance with instrumentation on plant turnarounds, startups, and for project work
- improves process availability and reduces operations and maintenance costs

The hands-on workshops with DeltaV v13.3.1 along with AMS Device Manager 13.5 will address areas relating to the instrument technician's daily tasks.

Prerequisites
Microsoft windows experience. Prospective attendees should first complete the eLearning AMS Device Manager Suite Primer e7020.

Topics
- Communication Bus Introduction
- AS-I Overview
- AS-I Wiring and Installation
- AS-I Networks and DeltaV
- PROFIBUS DP Overview
- PROFIBUS Wiring and Installation
- Configuring a PROFIBUS Segment
- DeviceNet Overview
- DeviceNet Diagnostics and Configuration
- Troubleshooting
- Serial Interface
- HART Overview
- Ethernet I/O Overview
- Wireless I/O Overview

DeltaV Safety Instrumented System with SLS 1508 Maintenance

Course 7303 CEUs: 2.1

Overview
This course is for Electrical & Instrument technicians, maintenance technicians, E&I/reliability engineers and other personnel responsible for maintaining a DeltaV SIS SLS 1508.

This 3-day course is a hands-on instructor led course. The course covers the architecture of the DeltaV SIS including Rosemount SIS instruments and Fisher SIS Digital Valve Controllers. Students will gain a working knowledge of the hardware and software allowing them to troubleshoot and maintain the system.

Prerequisites
Course 7018, DeltaV Hardware and Troubleshooting, is a requirement.

Topics
- Safety Lifecycle
- DeltaV SIS Overview
- DeltaV SIS Hardware
- Safety Instrumented Functions
- Rosemount SIS Instruments
- AMS Device Manager
- Fisher SIS Digital Valve Controller
- SISNet Repeaters

DeltaV Safety Instrumented System with Electronic Marshalling Maintenance

Course 7304 CEUs: 2.1

Overview
This course is for Electrical & Instrument technicians, maintenance technicians, E&I/reliability engineers and other personnel responsible for maintaining DeltaV SIS with Electronic Marshalling.

This 3-day hands-on instructor led course covers the architecture of the DeltaV SIS with Electronic Marshalling including Rosemount SIS instruments and Fisher SIS Digital Valve Controllers. Students will be able to identify the DeltaV SIS with Electronic Marshalling hardware and software components. Students will be able to configure Partial Stroke Test using DeltaV SIS with Electronic Marshalling. Students will practice troubleshooting and maintenance techniques with DeltaV SIS simulators throughout the course.

Prerequisites
Course 7018, DeltaV Hardware and Troubleshooting, is a requirement.

Topics
- Safety Lifecycle
- DeltaV SIS Overview
- DeltaV SIS with Electronic Marshalling Hardware architecture Including Power Requirements
- Commissioning and Downloading the DeltaV SIS with Electronic Marshalling components
- Safety Instrumented Functions
- Rosemount SIS Instruments
- AMS Device Manager
- Fisher SIS Digital Valve Controller
- DeltaV Diagnostics
- Partial Stroke Test using DeltaV SIS with Electronic Marshalling
- Local Safety Network Bridges

For DeltaV training information please refer to the appropriate contact on page 118.
For regional training center contacts refer to pages 116-117.
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DeltaV Operator Interface for Continuous Control

Course 7012/V CEUs: 1.4

Overview This course is for operators, supervisors and managers responsible for the operation of continuous processes using DeltaV system. This 2-day course uses lectures and hands-on workshops to provide an in-depth overview on operating the DeltaV System. Students who complete this course will:

- access operator displays
- manipulate various control module operating parameters to operate the process
- respond to process alarms
- monitor process performance
- view real-time and historical trend data

Topics

- System Overview
- Accessing DeltaV Operate Window, Menus Displays and Directories
- Discrete and Analog Control Module Operation
- Accessing Alarm Displays/Alarm Handling
- Motor Control Module Operation
- Regulatory/Cascade Control Module Operation
- Accessing Real-time/Historical Trend Data
- Unit Alarms
- Sequential Function Chart Operation
- Phase Logic Modules

Virtual Training Available, Call to Discusss.

eLearning: DeltaV Operator Interface for Continuous Control

Course e7012 CEUs: 1.2

Audience
Operators, supervisors and managers responsible for the operation of continuous processes with a DeltaV System. Ideal students for this course are new to the DeltaV System but already have process control/plant experience. This interactive on-line course includes audio presentations, demonstrations, practice sessions, workshops, quizzes, and a final examination. The average time to complete the course is 12 hours.

Topics

- System Overview; Accessing DeltaV Operate
- Navigating in DeltaV Operate
- Discrete, Analog, Regulatory, and Cascade Control Module Operation
- Motor Control Module Operation
- Accessing: Alarm Displays; Real-Time/Historical Trend Data; Process History View
- Using DeltaV Operate Themes

www.emersonprocess.com/education

Note: Course access is 12 months

DeltaV Operator Interface for Batch

Course 7014/V CEUs: 1.8

Overview
This course is for operators, supervisors, and managers responsible for the operation of batch processes using DeltaV system.

This 2-1/2 day course uses lectures and hands-on workshops to provide an in-depth overview on operating the DeltaV System. It includes all content in course 7012 plus students will:

- understand basic batch terminology
- manipulate Unit Module parameters
- access the Batch Operator Interface
- run procedures
- review batch history data

Topics

- System Overview
- Accessing DeltaV Operate
- Window, Menus Displays and Directories
- Discrete, Analog, Regulatory and Cascade Control Module Operation
- Motor Control Module Operation
- Accessing Alarm Displays/Alarm Handling
- Accessing Real-time/Historical Trend Data
- Accessing Process History View
- Sequential Function Chart Operation
- Phase and Recipe Controls
- Batch Operator Interface
- Batch Historian
- Campaign Manager

Price/Location/Start Date: Call to Discuss

Virtual Training Available, Call to Schedule.

eLearning: DeltaV Operator Interface for Batch Control

Course e7014 CEUs: 1.6

Audience
Operators, supervisors, and managers responsible for the operation of a batch process using the DeltaV system. This is an interactive 16-hour on-line course with DeltaV screens including audio presentations, demonstrations, practice sessions, workshops, quizzes and a final examination.

Topics

- System Overview
- Accessing DeltaV Operate
- Navigation in DeltaV Operate
- Discrete, Analog, Regulatory, and Cascade Control Module Operation
- Motor Control Module Operation
- Accessing Alarm Displays
- Accessing Real-Time/Historical Trend Data
- Accessing Process History View
- Phase and Recipe Controls
- Batch Operator Interface
- How to Add/Run Batches

www.emersonprocess.com/education

Note: Course access is 12 months

eLearning: Batch Analytics Operator

Course e7044 CEUs:.6

Overview
This course is designed for operators, process engineers, and management.

This 6-hour (average duration) on-line course provides an orientation of Batch Analytics and how it is used in a production environment. The course includes audio presentations, demonstrations, hands-on practices, hands-on workshops, and quizzes. Upon completion of this course, the student will be able to:

- define basic principles of Batch Analytics
- identify how Batch Analytics is used in fault detection and quality parameter prediction
- identify the Batch List, Quality Prediction, and Fault Detection screens
- monitor a fault
- interpret analytic data of a saline example
- identify the root cause of a detected fault

Prerequisites
DeltaV Batch experience and Microsoft Windows experience is required.

Topics

- Batch Analytics Overview
- Batch Analytics Model Builder Overview
- Batch Analytics Viewer Overview
- Batch Saline Simulation
- Benefits of Using Batch Analytics
- Batch Analytics Viewer – Batch List Tab
- Batch Analytics Viewer – Fault Detection Tab
- Batch Analytics Viewer – Quality Prediction

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Note: Course access is 12 months

DeltaV Operator Training Simulation (OTS)

Overview
DeltaV Operator Training Simulation (OTS) is an engineered, hands-on, process-specific learning environment designed to up-skill our customers' operations workforce. DeltaV OTS exposes operators to what they will experience in their actual control room. This enables operations personnel to gain experience in an off-line, non-intrusive environment. Operators will learn DeltaV operating concepts while learning their actual process in preparation to effectively handle incidents or process upsets. The ability to practice how to handle potential incidents in a simulation environment is invaluable.

The OTS training solution is not only key to preparing operations personnel prior to the start-up of new automation projects. It's an ongoing tool to train future operators, a great refresher tool and a platform for more advanced training for current operators.

DeltaV OTS includes the following key deliverables:

- Self-Guided Custom Curriculum Based on the Customer's Configuration and actual displays
- DeltaV Training Simulators that include both hardware and software that operate the customer configuration in a simulated environment
- Student Testing that includes realistic failure scenarios that record actual operator responses

Key tangible savings and benefits include:

- Quicker, Smoother Start-Ups
- Reduced Operator Error
- Product Loss Reduction/Elimination
- Improved Product Quality
- Regulatory Violation Reduction/Elimination
- Reduce Incident Reporting
- Operator Acceptance and Endorsement to Change Management

To discuss OTS and simulation contact us at OTS@EmersonProcess.com

For DeltaV training information please refer to the appropriate contact on page 118.
For regional training center contacts refer to pages 116-117.
Visit: www.emersonprocess.com/education for current dates, locations and enrollments.