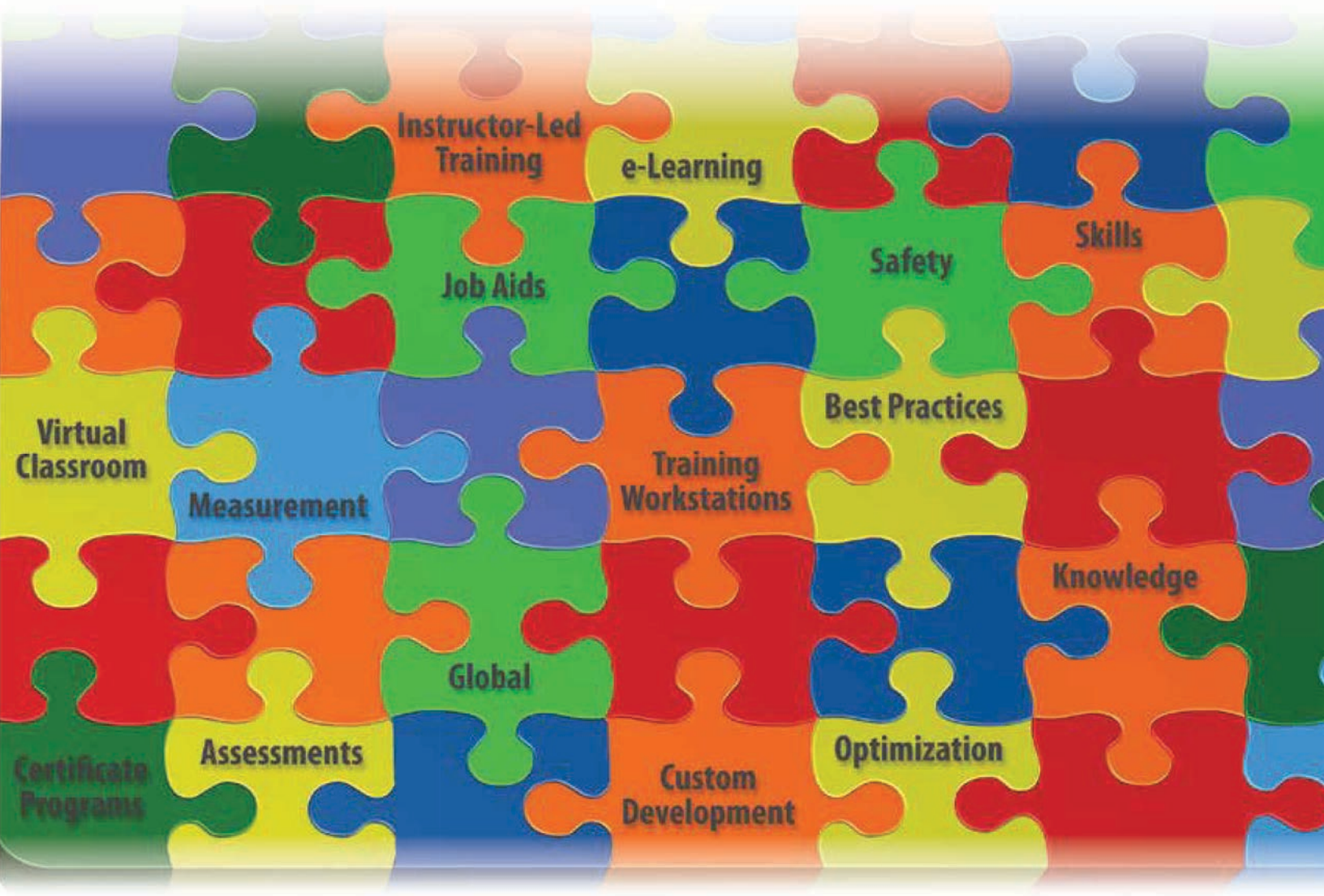
Training Services Catalog

Improve Job Performance with a Complete Workforce Training Solution



LISTEN. THINK. SOLVE.®

Allen-Bradley • Rockwell Software

Rockwell Automation

Rockwell Automation can help you bring together all the pieces of workforce training.

Assessments: Create a training strategy based on data rather than conjecture or opinion by determining workforce knowledge gaps and managing a cost-effective solution to close the gaps.

Instructor-Led Training: Select the right option for training delivery, including standard open enrollment courses, tailored training courses delivered onsite, or custom-developed courses based on your manufacturing application.

Virtual Classroom: Provide instructor-led training in smaller "bites" by integrating live, remote instruction over the Internet into your training solution. Virtual Classroom offers a blended learning experience, shorter training sessions, and interactive practices.

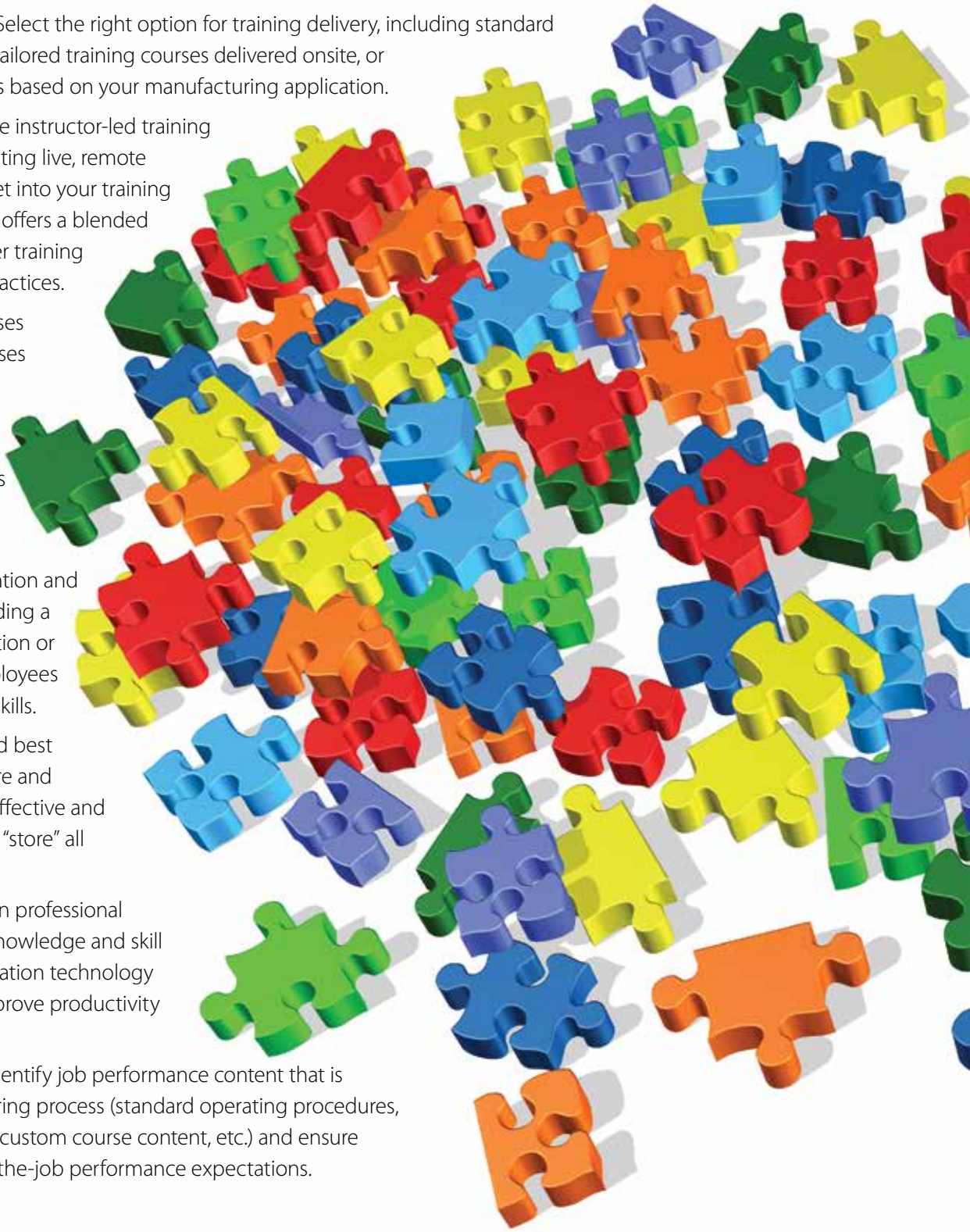
e-Learning: Invest in courses that reduce training expenses and address your varying workforce learning styles by including web-based or computer-based options in your training portfolio.

Training Workstations: Maximize knowledge retention and reinforce learning by providing a hands-on training workstation or simulator available for employees to practice newly learned skills.

Job Aids: Use documented best practices to ensure software and hardware procedures are effective and efficient without having to "store" all knowledge in memory.

Certificate Programs: Earn professional recognition for technical knowledge and skill development using automation technology and best practices that improve productivity and job performance.

Custom Development: Identify job performance content that is unique to your manufacturing process (standard operating procedures, troubleshooting practices, custom course content, etc.) and ensure documentation meets on-the-job performance expectations.



Scan this code to visit Rockwell Automation Training Services on the web.

Identify skill gaps and improve job performance and productivity with the expertise of Rockwell Automation. We can help you bring together all the pieces of workforce training into a comprehensive workforce training solution.

Rockwell Automation

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3	CCP153	RSLogix 5000 Level 2: ControlLogix Maintenance and Troubleshooting
4	CCP151	RSLogix 5000 Level 2: Basic Ladder Logic Programming
5	CCP143	RSLogix 5000 Level 3: Project Development
6	CCV204	FactoryTalk View ME and PanelView Plus Programming
7	CCPS43	SLC 500 and RSLogix 500 Maintenance and Troubleshooting
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The Right Training Makes All the Difference

Four Easy Ways to Enroll

Phone: Call your local Allen-Bradley distributor or 440-646-3434 (option 4)

Fax: Send completed Training Enrollment Form in the back of this catalog to your local Allen-Bradley distributor or Rockwell Automation Training office

Web:
www.rockwellautomation.com/training

Email: Send completed Training Enrollment Form in the back of this catalog to trainingservices@ra.rockwell.com

General Information

- **Training Schedules and Pricing**
  Refer to the Training Services website for current schedules and course tuition.

  www.rockwellautomation.com/services/training

- **Cancellation Policy**
  Cancellation of registration for a Rockwell Automation course less than 14 days prior to the start date is subject to a cancellation fee of 50% of the tuition. If a student fails to appear for a scheduled course, full tuition will be charged.

  Rockwell Automation strongly suggests that students only make refundable travel and lodging arrangements. Rockwell Automation reserves the right to alter course schedules, content, limit class size, reschedule, discontinue, or cancel courses.

- **Continuing Education Units (CEUs)**
  Rockwell Automation awards Continuing Education Units (CEUs) for a variety of courses from the International Association for Continuing Education and Training (IACET). Refer to the course description, which can be found in the training catalog or training schedule (www.rockwellautomation.com/training).

- **Terms and Conditions**
  Printed materials provided in Rockwell Automation training courses are copyrighted and may not be reproduced. No audio or visual recording of Rockwell Automation training courses, or Rockwell Automation personnel teaching such courses, may be taken or reproduced electronically.

Scan this code to access the Training Services website and online enrollment.

Rockwell Automation Training Offices

Rockwell Automation training is conducted in several cities across the country and in Canada. Call 440-646-3434 (option 4) to be routed to the nearest Rockwell Automation training coordinator in one of these locations:

United States		Canada
Atlanta	Little Rock	Brampton
Boston	Los Angeles	Calgary
Charlotte	Milwaukee	Cambridge
Chicago	Minneapolis	Dartmouth
Cincinnati	Nashville	Edmonton
Cleveland	New York City	Montreal
Dallas	Philadelphia	Vancouver
Davenport	Richmond	
Denver	Rochester	
Detroit	San Francisco	
Houston	Seattle	
Indianapolis	St. Louis	
Kalamazoo	Tampa	

Call 440-646-3434 (option 4) or email trainingservices@ra.rockwell.com with questions.

How to Use the Curriculum Maps

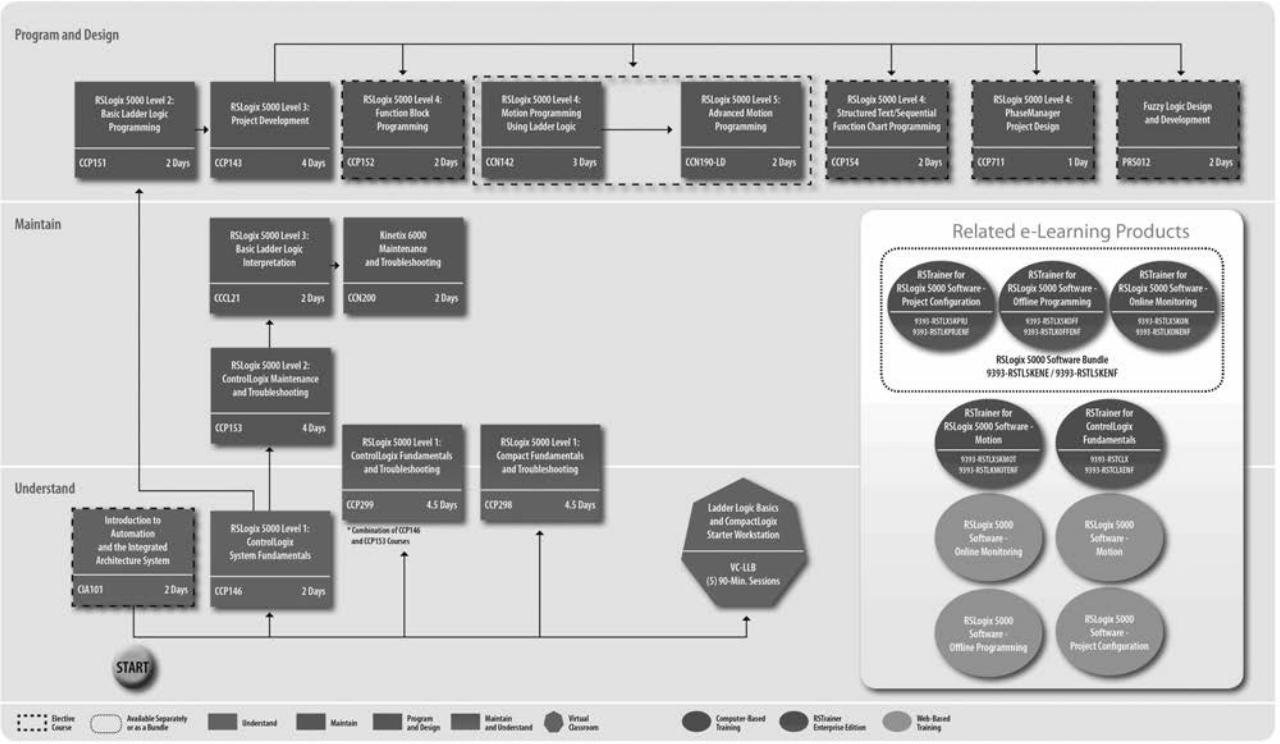
Curriculum Maps show a recommended training path based on your job task responsibilities within a technology area. For example, the courses in the maintain track are designed for and instruct students on maintenance-related responsibilities.

To use curriculum maps

1. Locate the **Start** icon. This is the beginning of the curriculum map.
2. Identify the recommended courses in the "**Understand"** track. Courses in the "Understand" track apply to all students and provide the prerequisite knowledge required to successfully complete courses in both the "Maintain" and "Program and Design" tracks. It is highly recommended you complete the courses in the "Understand" track before progressing to the other tracks in the curriculum.
3. Course titles that identify a level suggest a progression in content covered and level of complexity in the courses.
4. Follow the solid black arrows → from the "Understand" track to either the "Maintain" or "Program and Design" tracks. A dotted line indicates the course or path are optional.
5. Review **Related e-Learning Products** that are available for prerequisite, refresher, or supplemental courses. More than one e-Learning course surrounded by a dashed line represents a discounted bundle is available.

NOTE: When presented with a choice of two courses, select the most appropriate one by reviewing the course description or using the Course Selection Tool (www.rockwellautomation.com/training) to assess your knowledge on the course content. Courses connected by a dashed line indicate a course or path are optional.

ControlLogix/RSLogix 5000 Curriculum Map

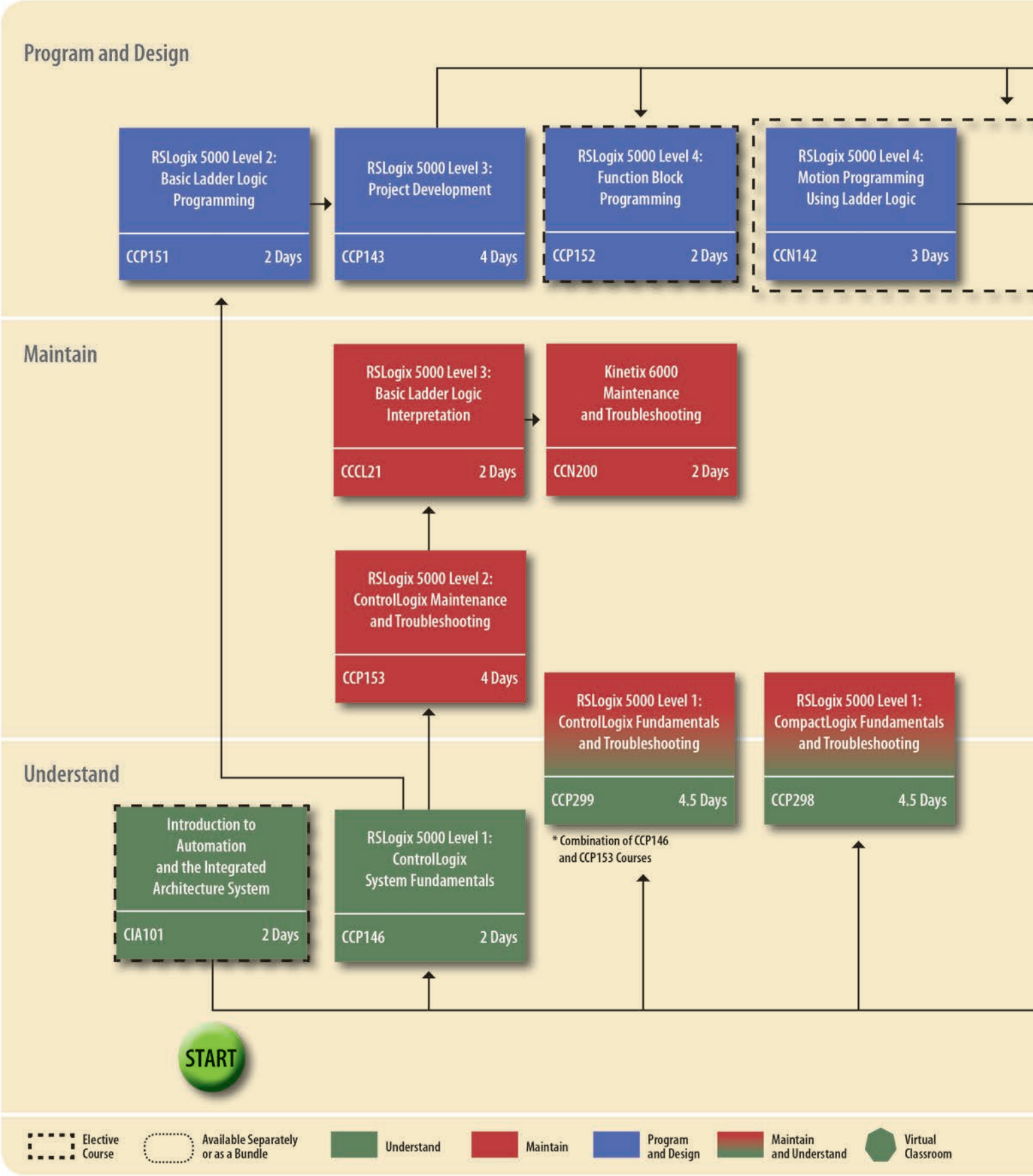


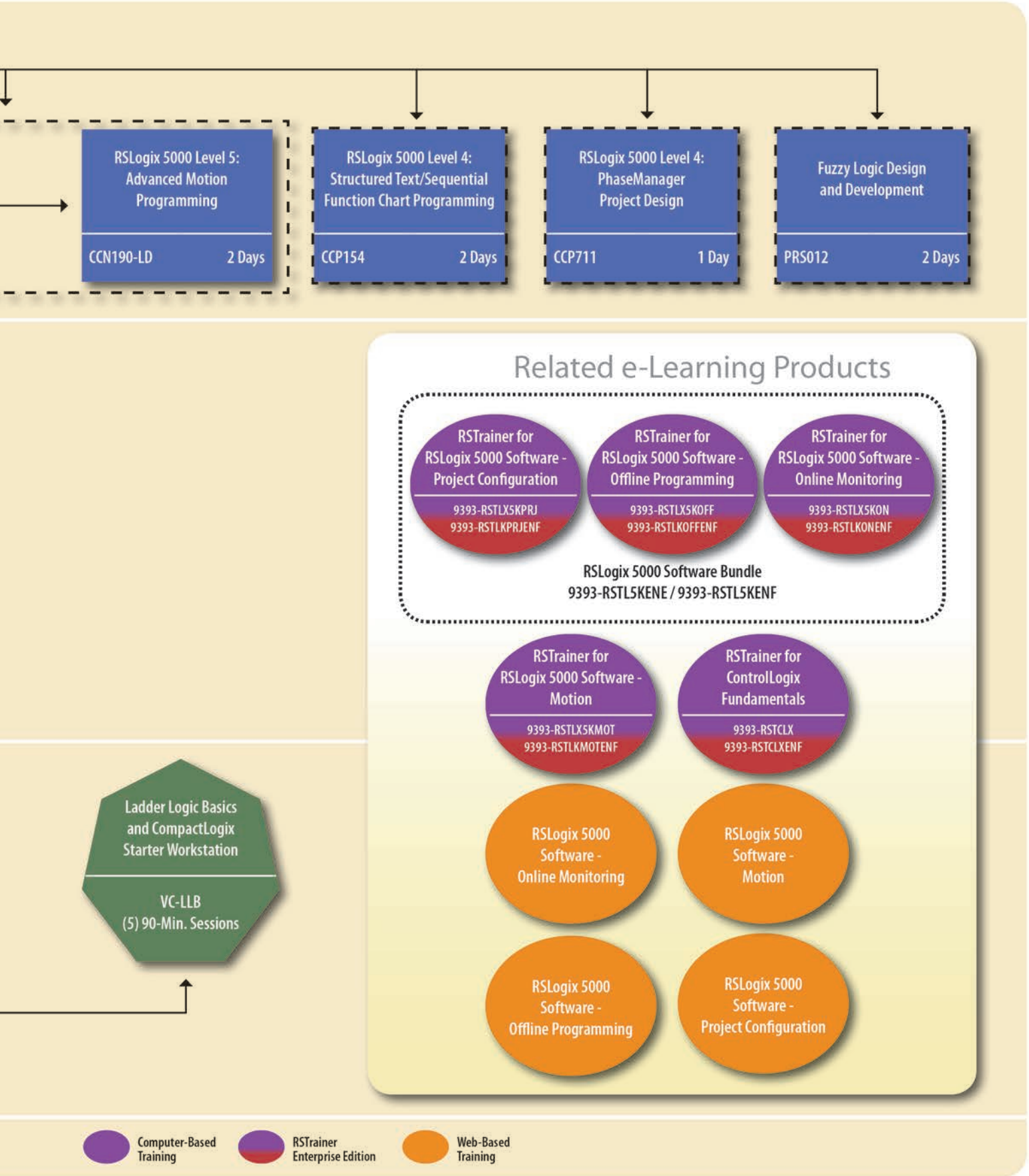
ControlLogix®/RSLogix™ 5000

Coming Soon!

Studio 5000 software will be released soon along with new curriculum courses. These courses will focus on the Logix Designer portion of the software. Be sure to check the Training Services website for current training schedules and course descriptions: www.rockwellautomation.com/training

ControlLogix/RSLogix 5000 Curriculum Map





LISTEN.
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Training + Starter Workstation

with "Build Your Own" Workstation Option

Attend ControlLogix courses and maintain your skills with our Starter Workstation

Take Your Classroom Training Back to Your Job

Six Rockwell Automation ControlLogix courses are bundled with a CompactLogix Starter Workstation to provide an opportunity for ongoing practice. This offer is optional; however, the CompactLogix Starter Workstation allows you to reinforce the skills acquired from any of the ControlLogix training classes. With this offer you can elect to "build your own" starter workstation or receive a pre-assembled workstation.

The workstation can be used for:

- Providing opportunities for realistic and safe practice
- Refreshing skills
- Reinforcing and practicing maintenance and troubleshooting skills

For a schedule of ControlLogix classes in your area and detailed course descriptions, go to http://www.rockwellautomation.com/training

CompactLogix Starter Workstation

Your CompactLogix Starter Workstation will include the following:

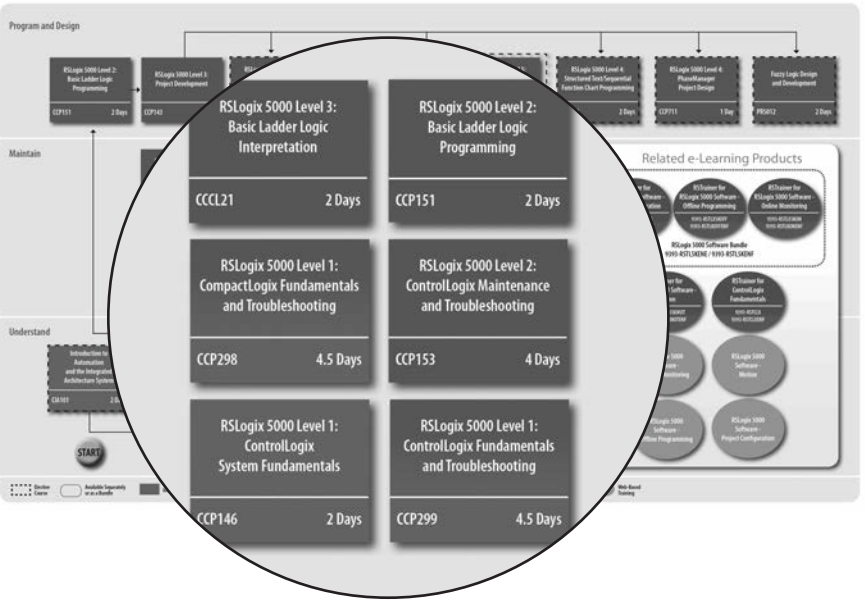
- Assembled workstation or a "build-your-own" workstation that includes a kit and an instruction guide
- 1 CompactLogix L31 processor (512K memory) or 1 CompactLogix L35E Ethernet processor (1.5MB memory)
- 1 CompactLogix AC power supply
- 1 digital combo, 6 digital in/ 4 digital out
- 4 momentary push buttons
- 2 selector switches
- 1 Compactbus end cap
- 1 serial port programming cable
- AmeriPak shipping case

Note: Software is not included with the starter workstation.

Dimensions

- Width: 14 in. (36 cm)
- Height: 10 in. (25 cm)
- Depth: 6 in. (15 cm)
- Weight: 15 lb (7 kg)

ControlLogix/RSLogix 5000 Curriculum Map



Introduction to Automation and the Integrated Architecture™ System

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CIA101

2 Days CEUs 1.4

Course Purpose

This course will assist students in developing and building a solid foundation of Integrated Architecture and automation system knowledge. Students will learn about and interact with a variety of automation hardware. They will also have an opportunity to use Rockwell Automation software to perform basic system configuration tasks. While performing these tasks, students will gain an understanding of how controllers, drives, motors, networks, and human-machine interface (HMI) products function together within Integrated Architecture.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Establish communications in an integrated system
- Program a basic RSLogix 5000 project for an integrated system
- Program with tag-based addressing in an integrated system
- Understand Logix5000™ multi-discipline control
- Understand NetLinx-enabled networks
- Understand the visualization development environment of an integrated system
- Understand HMI direct tag referencing in an integrated system

Who Should Attend?

Individuals who:

- Have little or no working experience with automation systems
- Are interested in gaining a broad understanding of automation and the Integrated Architecture System

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft® Windows® environment

RSLogix 5000 Level 1: ControlLogix System Fundamentals

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP146

2 Days CEUs 1.4

Course Purpose

This course is a skill-building opportunity for students who want to develop a solid fundamental knowledge of Logix5000 systems and terminology. Students will be introduced to Logix5000 system components and functionality and will have an opportunity to use RSLogix 5000 software to perform basic system networking and configuration tasks.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify Logix5000 system components
- Identify RSLogix 5000 software components
- Create and modify an RSLogix 5000 project
- Configure local 1756- I/O modules
- Create tags and monitor data in an RSLogix 5000 project
- Draft basic ladder logic for an RSLogix 5000 routine
- Select basic ladder logic instruments for an RSLogix 5000 routine
- Enter ladder logic components in an RSLogix 5000 routine
- Select and connect to industrial networks in a Logix 5000 system

This course is intended for maintainers or programmers. Some topics may be similar to topics covered in course CCP299.

Who Should Attend?

Individuals who have little or no working experience with Logix5000 systems or other programmable controllers

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Job Aids Included	Catalog #
Logix5000 Systems Glossary	ABT-1756-TSG10
RSLogix 5000 and Logix5000 Fundamentals Procedures Guide	ABT-1756-TSJ53

Ladder Logic Basics & CompactLogix™ Starter Workstation

Virtual Classroom

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

VC-LLB

(5) 90-Minute Sessions — CEUs 0.75

Course Purpose

This course teaches students how to write and test basic ladder logic code and how to employ common programming strategies and best practices. With the purchase of this course, students will receive a CompactLogix Starter Workstation with an L31 controller. Students will learn how to select and program bit, timer, counter, compare, and move instructions. Examples and labs will use RSLogix 5000 software and a CompactLogix L31 controller; however, the general ladder logic concepts covered in this course are applicable to most common programmable controllers.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Review basic logic flow
- Convert scenarios to if – then statements
- Convert if – then statements to simple rungs
- Enter ladder logic into software
- Download a project
- Monitor the ladder logic
- Tie the alias to an existing address
- Apply bit instructions and common ladder logic strategies
- Select a class of instruction categories
- Select and integrate timers and counters
- Select and integrate compare and move instructions
- Combine compare with move instructions

Who Should Attend?

Individuals who are required to edit ladder logic should attend this course.

Difficulty Level Beginner

Prerequisites

A general knowledge of automation, including the general purpose of a controller, data, and I/O; and the purpose of common devices like push buttons, pilot lights, limit switches, relays, contactors, and solenoids is required.

Technical Requirements

- A computer and phone
- RSLogix 5000 software (version 19) must be installed and activated. Your virtual classroom invitation will provide details on how to obtain a temporary installation of the software if you don't have it.
- CompactLogix Starter Workstation (with an L31 controller shipped to you prior to class)

RSLogix 5000 Level 1: ControlLogix Fundamentals and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP299

4.5 Days — CEUs 3.2

Course Purpose

This course assists students in building a solid foundation and fundamental knowledge of ControlLogix and other Logix5000 systems (e.g., CompactLogix™, FlexLogix™, DriveLogix™, and SoftLogix™). Students will be introduced to basic concepts and terminology, and they will be exposed to Logix5000 system hardware. The course builds upon this knowledge and presents students with the necessary resources and hands-on practice to efficiently troubleshoot a previously operational Logix5000 system. Students will be presented with a systematic strategy to diagnose and troubleshoot a variety of system problems, such as software configuration issues, electrical noise, controller, I/O, and other possible hardware issues.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify system and software components, and local I/O tags
- Connect a computer to a communications network
- Create tags and monitor data
- Edit ladder logic online
- Interpret arrays/tags of user-defined data types
- Force I/O
- Troubleshoot controller, digital I/O, analog I/O, and remote I/O, power supply, and noise problems

Who Should Attend?

Individuals who need to maintain and troubleshoot a ControlLogix or other Logix5000 system, but have no current working experience with Logix5000 systems

Difficulty Level Beginner

Job Aids Included	Catalog #
Logix5000 Systems Glossary	ABT-1756-TSG10
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50
ControlLogix 1756-L7x and -L6x Troubleshooting Guide	ABT-1756-TSJ20
Logix5000 Documentation Reference Guide	ABT-1756-DRG70

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Knowledge of basic ladder logic instructions (bit, timer, counter, etc.) through previous training and/or personal experience

This course is intended for maintainers. Some topics may be similar to topics covered in course CCP146, CCP153, and CCP298.

RSLogix 5000 Level 1: CompactLogix Fundamentals and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP298

4.5 Days CEUs 3.2

Course Purpose

This course will assist students in developing and building a solid foundation and fundamental knowledge of CompactLogix systems. They will be introduced to basic concepts and terminology, and system hardware. Building upon this knowledge, students will be provided with the resources and hands-on practice required to efficiently troubleshoot a previously operational CompactLogix system. Students will be presented with a systematic strategy for diagnosing and troubleshooting a variety of system problems, such as software configuration issues, electrical noise, controller, I/O, and other possible hardware issues.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify system and software components
- Connect a computer to a communications network
- Communicate with a Logix5000 controller
- Interpret RSLogix 5000 project organization and execution
- Create tags and monitor data
- Draft and select basic ladder logic/instructions
- Edit ladder logic online
- Monitor arrays and tags of user-defined data types
- Document and print components and search for project components
- Troubleshoot controller problems, digital and analog I/O problems, remote I/O, power supplies, noise problems
- Troubleshoot and monitor a system using a trend chart
- Interpret RSLogix 5000 project organization and execution

Who Should Attend?

Individuals who need to maintain and troubleshoot a CompactLogix system, but have no current working experience with Logix5000 system

Difficulty Level Beginner

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Knowledge of basic ladder logic instructions (bit, timer, counter, etc.) through previous training and/or experience

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50
Logix5000 Systems Glossary	ABT-1756-TSG10

This course is intended for maintainers. Some topics may be similar to topics covered in course CCP146, CCP153, and CCP299.

RSLogix 5000 Level 2: ControlLogix Maintenance and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP153

4 Days CEUs 2.8

Course Purpose

This course provides students with the necessary resources and hands-on practice to efficiently troubleshoot a previously operational ControlLogix or other Logix5000 system (e.g., CompactLogix, FlexLogix, DriveLogix, and SoftLogix). It builds upon students' fundamental knowledge of common controller terms and operation, ability to identify and create fundamental RSLogix 5000 project components, and experience interpreting basic ladder logic. This course adds to students' skill sets by introducing new tasks, such as connecting to a network, interpreting project execution, and editing ladder logic online. After practicing such skills, students will be presented with a systematic strategy for diagnosing and troubleshooting a variety of system errors, such as controller, I/O, and other hardware problems; noise-related problems; and software configuration problems.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Monitor and edit tags
- Edit ladder logic and function block diagrams
- Apply preventative maintenance and troubleshooting strategies
- Troubleshoot controller, power supply, and noise-related problems
- Force I/O and toggle bits
- Troubleshoot digital, analog, and remote I/O
- Update Logix5000 firmware
- Interpret project organization and execution, frequently used instructions, arrays, and tags of user-defined data types

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50
ControlLogix 1756-L5x and -L6x Troubleshooting Guide	ABT-1756-TSJ20
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

Who Should Attend?

Individuals who need to maintain and troubleshoot a ControlLogix or other Logix 5000 system

Difficulty Level Intermediate

Prerequisites

Completion of the *RSLogix 5000 Level 1: ControlLogix System Fundamentals* course (CCP146)

This course is intended for maintainers. Some topics may be similar to topics covered in course CCP299.

RSLogix 5000 Level 3: Basic Ladder Logic Interpretation

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCCL21

2 Days CEUs 1.4

Course Purpose

This course is a skill-building course that provides maintainers with a basic understanding of RSLogix 5000 ladder logic instructions and terminology. It also provides the resources and hands-on practice required to efficiently modify basic ladder logic instructions for a Logix5000 controller. Students will use RSLogix 5000 software to perform basic software tasks.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Document and search ladder logic
- Modify timer and counter instructions
- Modify program control instructions
- Modify compare instructions
- Modify compute and math instructions
- Modify move instructions
- *Optional:* Select basic ladder logic instructions for an RSLogix 5000 routine

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

Who Should Attend?

Individuals who:

- Have little experience with controllers
- Need to learn how to interpret ladder logic
- Are responsible for modifying Logix5000 controllers using RSLogix software

Difficulty Level Beginner

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 1: ControlLogix System Fundamentals* course (CCP146) or equivalent experience
- Completion of the *RSLogix 5000 Level 2: ControlLogix Maintenance and Troubleshooting* course (CCP153) or equivalent experience.

This course is intended for maintainers. Some topics may be similar to topics covered in course CCP151.

Kinetix® 6000 Maintenance and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCN200

2 Days CEUs 1.4

Course Purpose

This course provides students with skills required to diagnose common problems on a Kinetix 6000 system. Students will practice operating and troubleshooting the system through hands-on exercises using RSLogix 5000 software. Students will also learn how to maintain and troubleshoot a multi-axis motion control system. Students will practice identifying faults related to hardware and software by employing methods such as fault code tables, system LEDs, and other status indicators. Upon completion of this course, students will be able to apply maintenance and troubleshooting techniques to diagnose and correct common problems on a Kinetix 6000 system.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify Kinetix 6000 system components
- Check Kinetix 6000 connections
- Interpret Kinetix 6000 indicators
- Analyze fault codes in a Kinetix 6000 system
- Interpret motion instructions in an RSLogix 5000 project
- Troubleshoot a Kinetix 6000 system
- Test and tune axes in an RSLogix 5000 project
- Replace a Kinetix 6000 drive

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Motion Control Procedures Guide	ABT-1756-TSJ52
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

Who Should Attend?

Individuals who need to maintain and troubleshoot Kinetix 6000 motion control systems

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *Motion Control Fundamentals* course (CCN130) or equivalent experience with drives, feedback devices, and velocity and position loop systems
- Completion of the *RSLogix 5000 Level 1: ControlLogix* System *Fundamentals* course (CCP146) or equivalent experience with the ControlLogix platform and basic ladder logic

RSLogix 5000 Level 2: Basic Ladder Logic Programming

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP151

2 Days CEUs 1.4

Course Purpose

This course provides programmers with a basic understanding of RSLogix 5000 ladder logic instructions and terminology. Resources and hands-on practice are provided to program basic ladder logic instructions for a Logix5000 controller. Students will use RSLogix 5000 software to perform basic software tasks to meet the requirements of a given functional specification.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Start and test a ladder diagram
- Program timer and counter instructions
- Program control instructions
- Program compare, move, and math instructions
- Program and separate the procedure from equipment control
- Document and search and handle expressions
- Copy and file an array

This course is intended for programmers. Some topics may be similar to topics covered in course CCCL21.

Who Should Attend?

Individuals who:

- Have little controller experience
- Are responsible for programming Logix5000 controllers using RSLogix 5000
- Need to draft ladder logic for any application

Difficulty Level Beginner

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 1: ControlLogix System Fundamentals* course (CCP146) or equivalent experience

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

RSLogix 5000 Level 3: Project Development

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP143

4 Days CEUs 2.8

Course Purpose

Given a functional specification for a Logix5000 application, students will be able to develop a project during the course to meet the specification requirements. This course covers tasks common to all controllers that use the Logix5000 control engine or operating system, including ControlLogix, FlexLogix, CompactLogix, SoftLogix, and DriveLogix controllers. This course instructs students on project development tasks, including organizing a project, organizing data, and configuring modules

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Communicate with a controller
- Create and organize a new project
- Enter, edit, and verify ladder logic
- Communicate with a local 1756-I/O module
- Configure a controller to produce and consume data
- Create a periodic and event task
- Communicate with a remote 1756-I/O module
- Retrieve and set controller status values with GSV/SSV instructions
- Document, search, and manage project files
- Allocate connections
- Configure Logix5000 controllers to share data over Ethernet/IP and ControlNet
- Update Logix5000 firmware
- Organize data
- Create user-defined data type
- Configure a message
- Develop an add-on instruction in ladder diagram

Who Should Attend?

Individuals who need to develop RSLogix 5000 projects for any Logix5000 controller

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 1: ControlLogix System Fundamentals* course (CCP146) or completion of the *RSTrainer for ControlLogix Fundamentals* computer-based training (9393-RSTCLX)
- Completion of the *RSLogix 5000 Level 2: Basic Ladder Logic Programming* course (CCP151) or equivalent experience

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

RSLogix 5000 Level 4: Function Block Programming

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP152

2 Days CEUs 1.4

Course Purpose

This course provides students with an understanding of RSLogix 5000 function block diagrams and terminology. Resources and hands-on practice are also provided to program a Logix5000 controller using function block diagrams. Students will perform parameter modifications to function block instructions and create and develop function block diagram programs and routines.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Create a function block diagram
- Program logical function block instructions
- Program timer and counter function block instructions
- Program analog function block instructions
- Program device driver function block instructions
- Select timing modes in a function block instruction
- Program and monitor an RMPS (ramp/soak) function block instruction
- Control program flow using function block instructions
- Develop an add-on instruction in function block diagram
- Program a totalizer function block instruction
- Program a PID loop using function block diagram
- Tune a PID loop using ActiveX controls

Who Should Attend?

Individuals who are responsible for developing, debugging, and programming Logix5000 controllers using RSLogix 5000 software with function block diagrams

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Understanding of basic measurement and control theory, including basic loop control
- Completion of the *RSLogix 5000 Level 3: Project Development* course (CCP143) or equivalent experience

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50

RSLogix 5000 Level 4: Motion Programming Using Ladder Logic

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCN142

3 Days CEUs 2.1

Course Purpose

This course provides students with the skills to configure and program Logix5000 applications specifically for integrated motion control functionality using ladder logic, including both SERCOS and analog motion control technologies. Students will learn how to apply the Logix5000 architecture to a multi-axis motion control system while developing programming skills that incorporate other components in a Logix5000 system, such as adding system modules, sharing tasks between multiple controllers, programming ladder logic, and using digital I/O.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Start a Logix5000 system for motion control applications
- Add hardware
- Test and tune axes
- Program basic motion and fault routines
- Program electronic gearing and camming routines
- Program a virtual axis
- Preview drvies and motion accelerator toolkit

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Motion Procedures Guide	ABT-1756-TSJ52
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

Who Should Attend?

Individuals who:

- Need to configure and program Logix5000 motion control systems
- Are already familiar with Logix5000 systems and general motion control

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *Motion Control Fundamentals* course (CCN130) or equivalent experience with drives, feedback devices, and velocity and position loop systems
- Completion of the *RSLogix 5000 Level 3: Project Development* course (CCP143) or equivalent experience
- Experience with entering and debugging ladder logic

RSLogix 5000 Level 5: Advanced Motion Programming

International Association for Continuing Education and Training

CCN190-LD

2 Days CEUs 1.4

Course Purpose

This course is intended to provide students with the skills to configure and program Logix5000 applications specifically for integrated motion control functionality using ladder logic, including both SERCOS and analog motion control technologies. Students will learn how to apply the Logix5000 architecture to a multi-axis motion control system while developing programming skills that incorporate other components in a Logix5000 system, such as adding system modules, sharing tasks between multiple controllers, programming ladder logic, and using digital I/O.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Program coordinated move transform instructions
- Manually tune servo axes
- Calculate a cam profile
- Program output cam instructions
- Program event driven tasks
- Program coordinate and motion add-on instructions
- Develop a motion control project using power programming

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Motion Control Procedures Guide	ABT-1756-TSJ52
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

Who Should Attend?

Individuals who:

- Need to program advanced Logix5000 motion control systems
- Are already familiar with Logix5000 systems and general motion control

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 3: Project Development* course (CCP143) or equivalent experience with basic ladder logic programming
- Completion of the *RSLogix 5000 Level 4: Motion Programming Using Ladder Logic* course (CCN142) or equivalent experience

RSLogix 5000 Level 4: Structured Text/Sequential Function Chart Programming

International Association for Continuing Education and Training

CCP154

2 Days CEUs 1.4

Course Purpose

During this course, students will be able to practice programming structured text and sequential function chart routines in an RSLogix 5000 project to meet the requirements of a given specification. Building on students' project development skills, such as creating tags and configuring I/O, this course provides the skills and knowledge to program using the structured text and sequential function chart programming languages. Students will learn how to select instructions, expressions, and constructs, and then enter these elements and more into a routine. Students will also learn how to test sequential function chart logic using forces and step throughs.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Design a sequential function chart
- Program and test a sequential function chart
- Store, pause, and reset sequential chart data
- Program assignments, expressions, and instructions in structured text
- Program constructs and comments in structured text

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50

Who Should Attend?

Individuals who need to program structured text and sequential function chart routines in RSLogix 5000 projects for any Logix5000 controller

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 3: Project Development* course (CCP143) or completion of the *RSTrainer for RSLogix 5000 Software Offline Programming* computer-based training course or experience with basic RSLogix 5000 projects (navigating the software, creating tags, creating routines, etc.)

RSLogix 5000 Level 4: PhaseManager™ Project Design

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP711

1 Day CEUs 0.7

Course Purpose

This course is intended to provide students with the skills to configure and program Logix5000 applications in accordance with the S88 state model using the PhaseManager feature. This course presents a tool that will help students effectively organize and structure batch applications. Students will organize an RSLogix 5000 project by identifying control and equipment modules within application code. They will separate equipment code from equipment phase code, configure state logic to transition between equipment states, and complete a project that uses an internal sequencer to activate each of the equipment phases according to a batch procedure.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Define equipment phases and state models in an RSLogix 5000 project
- Separate equipment code from equipment phase code
- Test an equipment phase
- Configure a sequential function chart as an internal sequencer

Who Should Attend?

Individuals who need to apply the S88 state model to RSLogix 5000 projects for any Logix5000 controller

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 3: Project Development* course (CCP143) or advanced programming experience using RSLogix 5000 software
- Familiarity with sequential function chart programming language

Fuzzy Logic Design and Development

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

PRS012

2 Days CEUs 1.4

Course Purpose

This course provides students with the skills to produce a fuzzy control system for a continuous process application. It introduces the range of options for fuzzy systems but focuses on using fuzzy logic to adjust the gains of a PID loop to meet specific control requirements. Starting with a description of a process, students will decide whether fuzzy logic is the best control method, and then will design a fuzzy system, develop it in FuzzyDesigner software, and implement it in a Logix5000 controller. Students will also use FuzzyDesigner's simulation, graphing, and online monitoring tools to validate the system against control requirements.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Choose a control scheme
- Identify terms and membership parameters
- Write rules
- Create FuzzyDesigner components
- Simulate a fuzzy system's execution
- Graph inputs and outputs
- Create and monitor a fuzzy add-on instruction

Who Should Attend?

Individuals who need to design, develop, or implement advanced process control applications

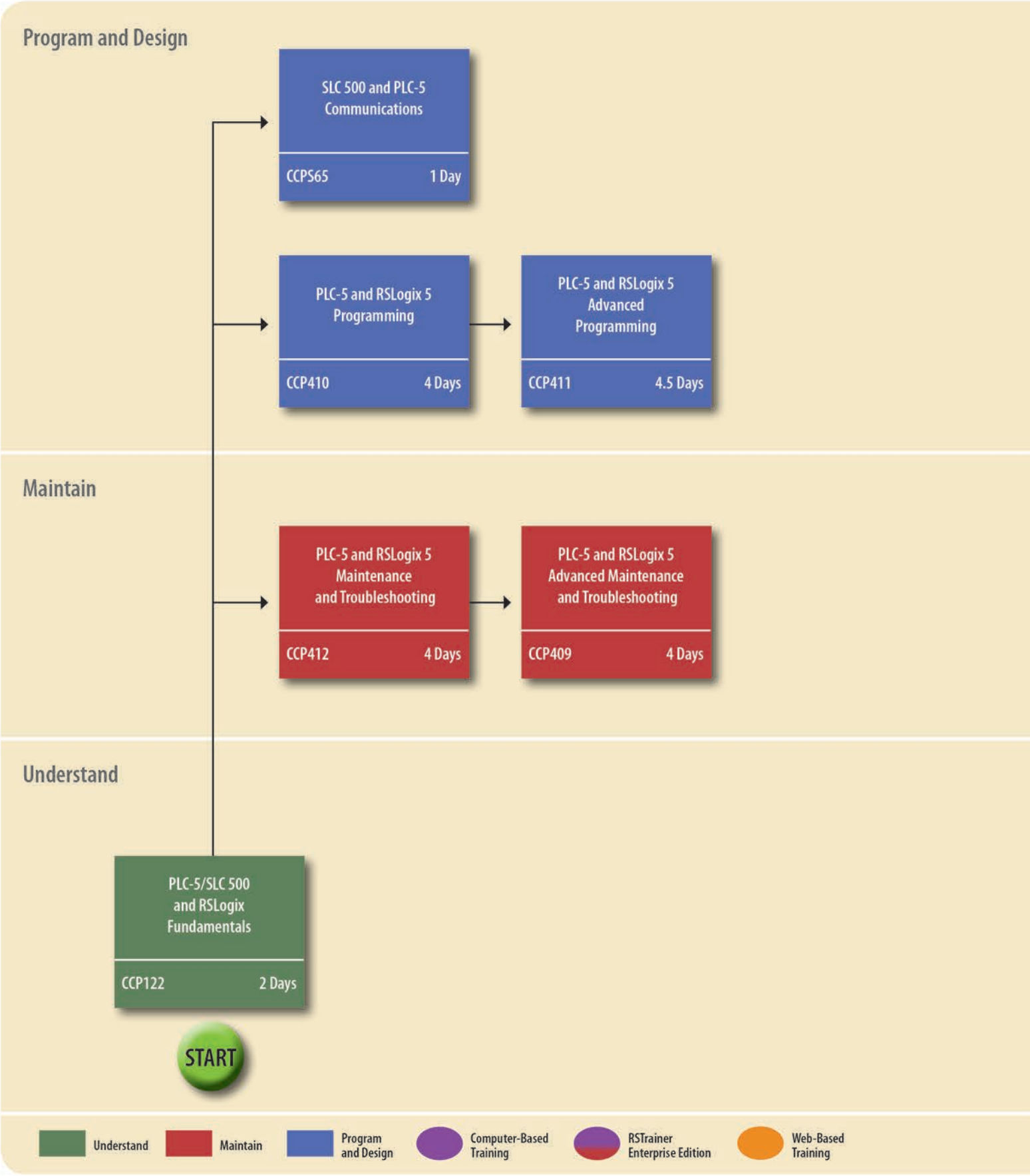
Difficulty Level Intermediate

Prerequisites

- Ability to perform these RSLogix 5000 software skills:
  - Entering and editing logic
  - Downloading and going online
  - Monitoring and editing data
- Completetion of the *RSLogix 5000 Level 1: ControlLogix System Fundementals* course (CCP146)

PLC-5®/RSLogix™ 5

PLC-5/RSLogix 5 Curriculum Map



Related e-Learning Products

PLC-5/SLC™ 500 and RSLogix Fundamentals

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP122

2 Days CEUs 1.4

Course Purpose

This course is an introduction to programmable controller systems. Students will learn about programmable controller systems, how they work, and how they can be used to control various processes and machines. They will receive a thorough introduction to RSLogix 5 or RSLogix 500 software, and will learn how to transfer, monitor, and run projects on a PLC-5 or SLC 500 processor and how to interpret simple ladder logic.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify main processor components and functions
- Identify hardware components of I/O systems
- Identify I/O configurations
- Change the radix (base) of a number
- Set up communications between a programming system and a processor
- Identify PLC-5 and SLC 500 system addresses
- Interpret simple ladder logic
- Interpret Timer On-Delay (TON) and Count Up (CTU) instructions

Who Should Attend?

Individuals who are new to PLC-5/SLC 500 systems and applications using RSLogix software

Difficulty Level Beginner

Prerequisites

There are no prerequisites for this course.

PLC-5 and RSLogix 5 Maintenance and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP412

4 Days CEUs 2.8

Course Purpose

This skill-building course provides students with the knowledge and the practice needed to interpret, isolate, and diagnose common hardware problems related to noise, power, and discrete and analog I/O. In troubleshooting scenarios, students are introduced on basic ladder logic interpretation, which is applied to diagnostic tasks. Students practice these diagnostic skills by tracing through ladder logic instructions in an RSLogix 5 project.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Communicate with a PLC-5 processor
- Monitor and enter data
- Interpret instructions
- Edit and search ladder logic
- Document and search a project
- Force inputs and outputs
- Configure and preview a project report
- Create a histogram and trend chart
- Troubleshoot noise, discrete and analog I/O, I/O channel and chassis, and processor/power supply problems

Who Should Attend?

Individuals who are responsible for troubleshooting and maintaining PLC-5 systems using RSLogix 5 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft® Windows® environment
- Experience maintaining electrically controlled systems
- Working knowledge of programmable controllers or completion of the *PLC-5/SLC 500 and RSLogix Fundamentals* course (CCP122)

Job Aids Included	Catalog #
PLC-5 and RSLogix 5 Troubleshooting Guide	ABT-1785-TSJ22
RSLogix 5 and PLC-5 Procedures Guide	ABT-1785-TSJ53
PLC-5 Documentation Reference Guide CD	ABT-1785-DRG70

PLC-5 and RSLogix 5 Advanced Maintenance and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP409

4 Days CEUs 2.8

Course Purpose

This course builds upon students' knowledge of basic maintenance and troubleshooting techniques and provides the practice needed to interpret, isolate, and diagnose problems found in advanced PLC-5 applications. Students will interpret and modify advanced ladder logic instructions in troubleshooting scenarios. In addition, students practice diagnostic skills by tracing through ladder logic instructions and troubleshooting communications problems with Data Highway Plus™ (DH+™) and remote I/O networks.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Troubleshoot DH+ communications
- Troubleshoot program flow and interrupt routines
- Troubleshoot sequential function charts
- Troubleshoot multiple main control programs
- Troubleshoot fault, STI, and PII routines
- Troubleshoot FSC, immediate I/O update, shift register, and sequencer instructions
- Troubleshoot message and PID instructions
- Troubleshoot analog data transfers
- Troubleshoot data transfers between scanner and adapter
- Troubleshoot indexed and indirect addressing
- Apply preventative maintenance and troubleshooting strategies to a PLC-5 system

Who Should Attend?

Individuals who are responsible for maintaining and troubleshooting advanced PLC-5 applications using RSLogix 5 software

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Experience maintaining electrically controlled systems
- Completion of the *PLC-5 and RSLogix 5 Maintenance and Troubleshooting* course (CCP412)

Job Aids Included	Catalog #
PLC-5 and RSLogix 5 Troubleshooting Guide	ABT-1785-TSJ22
RSLogix 5 and PLC-5 Procedures Guide	ABT-1785-TSJ53
PLC-5 Documentation Reference Guide CD	ABT-1785-DRG70

PLC-5 and RSLogix 5 Programming

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP410

4 Days CEUs 2.8

Course Purpose

This course introduces students to programming techniques and instructions to configure and program a 1785 PLC-5 system. The instructor will demonstrate how to use programming instructions and techniques to create a ladder logic project. Students will be given exercises that provide them with hands-on practice using RSLogix 5 software to program a PLC-5 processor.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Establish communications
- Configure channels
- Identify addresses and organize the data table
- Draft ladder logic
- Program instructions
- Enter, edit, and verify ladder logic
- Select and program timer and counter instructions
- Control program flow
- Convert integer values to and from binary coded decimal values
- Select and program mathematical, compare, and manipulation instructions
- Configure and preview a project printout
- Enter documentation
- Search ladder logic

Who Should Attend?

Individuals who have to write ladder logic projects for 1785 PLC-5 processors

Difficulty Level Intermediate

Prerequisites

- Experience with basic control and electrical principles
- Completion of the *PLC-5/SLC 500 and RSLogix Fundamentals* course (CCP122) or equivalent experience

Job Aids Included	Catalog #
RSLogix 5 and PLC-5 Procedures Guide	ABT-1785-TSJ53
PLC-5 Documentation Reference Guide CD	ABT-1785-DRG70

PLC-5 and RSLogix 5 Advanced Programming

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP411

4.5 Days CEUs 3.2

Course Purpose

This course will help provide students with the skills needed to program PLC-5 processors using RSLogix 5 software. Students will practice using advanced programming techniques and instructions. The instructor will demonstrate all relevant procedures, then provide students with realistic situations in which to practice those procedures.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Set up a PLC-5 system on a DH+ network
- Plan program flow strategies
- Program SFCs, MCPs, and advanced routines
- Program various advanced instructions
- Apply indirect and indexed addressing
- Transfer data between processors and analog modules
- Tranfer data between scanner and adapter processors

Who Should Attend?

Individuals who need to write or interpret ladder logic projects using advanced programming techniques and instructions for PLC-5 processors

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *PLC-5 and RSLogix 5 Programming* course (CCP410) or equivalent experience

Job Aids Included	Catalog #
RSLogix 5 and PLC-5 Procedures Guide	ABT-1785-TSJ53
PLC-5 Documentation Reference Guide CD	ABT-1785-DRG70

SLC 500 and PLC-5 Communications

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCPS65

1 Day CEUs 0.7

Course Purpose

This blended-media course introduces students to the communication capabilities of RSLinx® software. This course gives students the needed skills required to configure and manage various communications options between RSLinx software and RSLogix 500 or RSLogix 5 software. Using features built into RSLinx software, students will learn how to monitor, optimize, and diagnose industrial network communications.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Configure a Data Highway Plus (DH+) communications and serial driver in RSLinx software
- Navigate RSLinx software
- Download and upload a project
- Go online to an SLC 500 or PLC-5 processor
- Change the processor operating mode
- Determine available system resources on RSLinx software
- Apply diagnostic tools and utilities
- Configure client application communications

Who Should Attend?

Individuals who are responsible for programming or maintaining and troubleshooting SLC 500 or PLC-5 applications using RSLogix 500 or RSLogix 5 software

Difficulty Level Intermediate

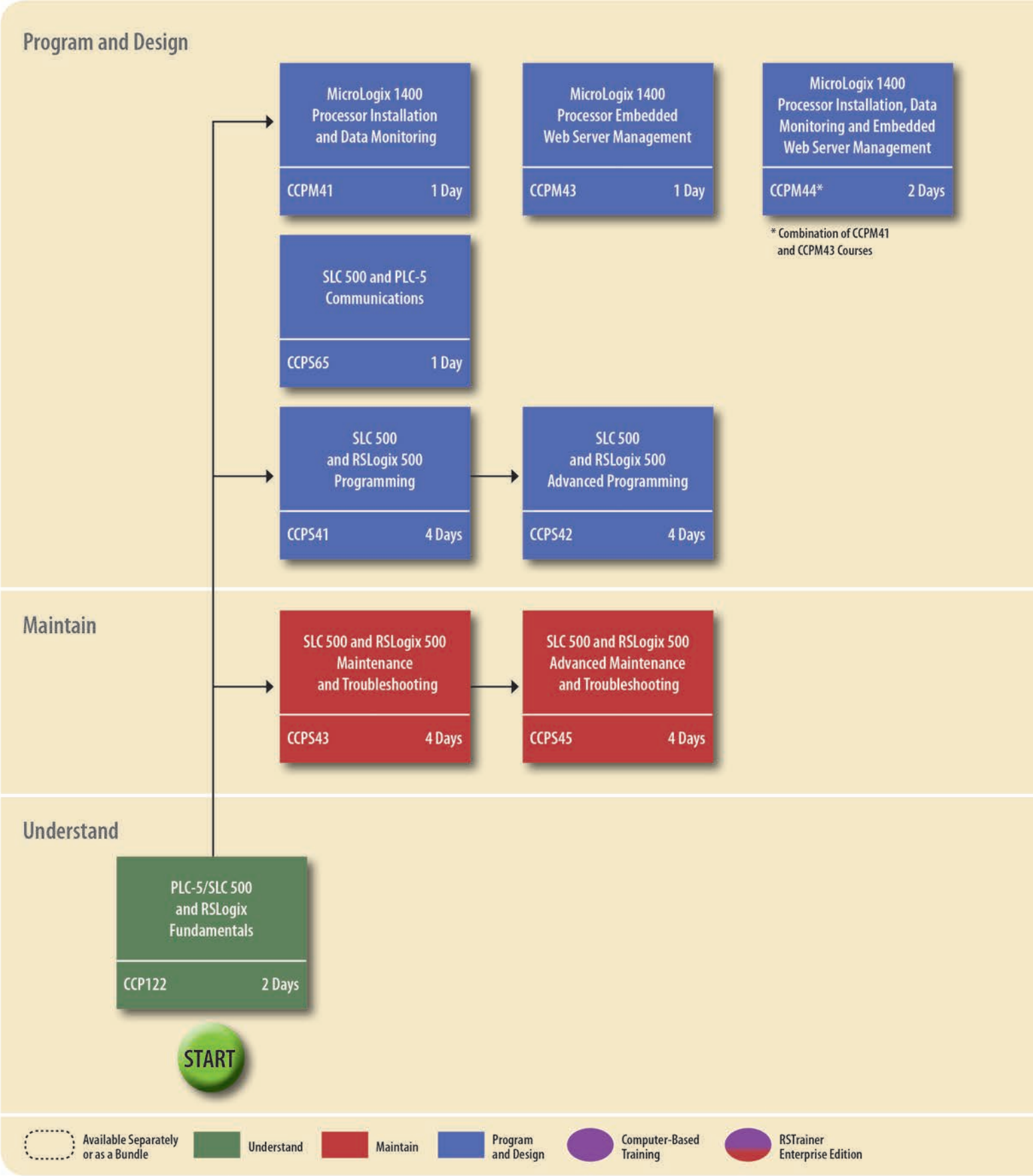
Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Experience maintaining electrically controlled systems
- Completion of the *Fundamentals of Programmable Controller Systems Using RSLogix 5 or RSLogix 500 Software* course (CCP122) or a fundamental knowledge of programmable controllers

Job Aids Included	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
RSLogix 5 and PLC-5 Procedures Guide	ABT-1785-TSJ53
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

SLC™ 500/RSLogix™ 500

SLC 500/RSLogix 500 Curriculum Map



Related e-Learning Products

RSCompanion for SLC 500 and MicroLogix Processors
9393-RSCOMP500

RSTrainer for SLC 500 - Hardware Fundamentals
9393-RSTSLCHENE
9393-RSTSLCHENF

RSTrainer for SLC 500 - Programming Fundamentals
9393-RSTSLCPENE
9393-RSTSLCPENF

SLC 500 Fundamentals Bundle
9393-RSTSLCALENE / 9393-RSTSLCALENF

RSTrainer for RSLinx Software
9393-RSTLINX
9393-RSTLINXENF

Spanish RSTrainer for RSLogix 500 Software - Offline Programming
9393-RST5000FESE
9393-RST5000FESF

RSTrainer for RSLogix 500 Software - Offline Programming
9393-RST5000FENE
9393-RST5000FENF

RSTrainer for RSLogix 500 Software - Online Monitoring
9393-RST5000NENE
9393-RST5000NENF

RSTrainer for RSLogix 500 Software - Documenting and Searching
9393-RST500DSENE
9393-RST500DSENF

RSLogix 500 Software Bundle
9393-RST500ALENE / 9393-RST500ALENF

Available in Spanish

SLC 500 Hardware Fundamentals

SLC 500 Programming Fundamentals

RSLogix 500 Software - Offline Programming

RSLogix 500 Software - Online Monitoring

RSLogix 500 Software - Documenting and Searching

Web-Based Training

PLC-5®/SLC 500 and RSLogix Fundamentals

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP122

2 Days CEUs 1.4

Course Purpose

This course is an introduction to programmable controller systems. Students will learn about programmable controller systems, how they work, and how they can be used to control various processes and machines. Students will also receive a thorough introduction to RSLogix 5 or RSLogix 500 software. Students will learn how to transfer, monitor, and run projects on a PLC-5 or SLC 500 processor and how to interpret simple ladder logic.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify main processor components and functions
- Identify hardware components of I/O systems
- Identify I/O configurations
- Change the radix (base) of a number
- Set up communications between a programming system and a processor
- Identify PLC-5 and SLC 500 system addresses
- Interpret simple ladder logic
- Interpret Timer On Delay (TON) and Count Up (CTU) instructions

Who Should Attend?

Individuals who are new to PLC-5/SLC 500 systems and applications using RSLogix software

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft® Windows® environment

SLC 500 and RSLogix 500 Maintenance and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCPS43

4 Days CEUs 2.8

Course Purpose

This skill-building course provides the necessary practice needed to interpret, isolate, and diagnose common hardware problems related to noise, power, and discrete and analog I/O. In troubleshooting scenarios, students are introduced to basic ladder logic interpretation, which is applied to diagnostic tasks. Students practice these diagnostic skills by tracing through ladder logic instructions in an RSLogix 500 project.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Monitor and enter data
- Troubleshoot processor, power supply, and noise-related problems
- Troubleshoot discrete and analog I/O problems
- Search, document, and edit ladder logic
- Create a histogram
- Force inputs and outputs
- Interpret various ladder logic instructions
- Configure and preview a project report

Job Aids Included	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
SLC 500 and RSLogix 500 Troubleshooting Guide	ABT-1747-TSJ22
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

Who Should Attend?

Individuals who need to troubleshoot and maintain SLC 500 systems using RSLogix 500 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Experience maintaining electrically controlled systems
- Working knowledge of programmable controllers or completion of the *PLC-5/SLC 500 and RSLogix Fundamentals* course (CCP122)

SLC 500 and RSLogix 500 Advanced Maintenance and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCPS45

4 Days CEUs 2.8

Course Purpose

This course provides the practice needed to interpret, isolate, and diagnose problems found in advanced SLC 500 applications. In troubleshooting scenarios, students interpret and modify advanced ladder logic instructions by operating simulation devices and HMI applications, such as PanelView™ terminals and RSView®32 software applications. Students practice these diagnostic skills by tracing through ladder logic instructions and troubleshooting communications problems with DH+ and remote I/O networks.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Troubleshoot RSLogix 500 projects containing the following:
  - STI, DII, program flow/interrupt, and fault routines
  - Immediate I/O update, shift register, sequencer, and PID instructions
  - Indexed and indirect addressing
  - Message instructions for DH+ communications
  - Remote I/O addressing
  - Discrete data transfers on a remote I/O link
  - Block transfers on a remote I/O link
- Apply preventative maintenance and troubleshooting strategies

Job Aids Included	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
SLC 500 and RSLogix 500 Troubleshooting Guide	ABT-1747-TSJ22
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

Who Should Attend?

Individuals who are responsible for maintaining and troubleshooting advanced SLC 500 applications using RSLogix 500 software

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Experience maintaining electrically controlled systems
- Completion of the *SLC 500 and RSLogix 500 Maintenance and Troubleshooting* course (CCPS43)

SLC 500 and RSLogix 500 Programming

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCPS41

4 Days CEUs 2.8

Course Purpose

This course provides students with the resources and hands-on practice to program an SLC 500 processor. Students will create a program, step-by-step, to meet the requirements of a given functional specification. As each section of the program is built, students will gain experience that can be applied to more advanced RSLogix 500 projects.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Create a new project and draft ladder logic
- Determine program flow and create subroutines
- Select and program various instructions
- Enter, edit, and verify ladder logic
- Enter and search for documentation
- Test a project
- Configure and preview a project report
- Communicate with an SLC 500 processor
- Organize the data table
- Determine addresses and assign symbols

Job Aids Included	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

Who Should Attend?

Individuals who are responsible for programming SLC 500 applications using RSLogix 500 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Experience with basic control and electrical principles
- Working knowledge of programmable controllers, or
- Completion of the *PLC-5/SLC 500 and RSLogix Fundamentals* course (CCP122)

SLC 500 and RSLogix 500 Advanced Programming

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCPS42

4 Days CEUs 2.8

Course Purpose

This course provides programmers with skills to develop advanced ladder logic projects for SLC 500 systems using RSLogix 500 software. This course covers several networking options, particularly Data Highway Plus™ (DH+™) and remote I/O communications. Students will be introduced to DH+ and remote I/O communications configurations and will have the opportunity to program advanced instructions for data transfer over a DH+ network and a remote I/O link.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Plan program flow strategies
- Program STI, DII, and fault routines
- Apply immediate I/O update instructions
- Program shift register, sequencer, and PID instructions
- Assign remote I/O addresses
- Configure an SLC 500 system for discrete data transfers and block transfers on a remote I/O link
- Apply indirect and indexed addressing
- Program a message instruction for DH+ communications

Job Aids Included	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

Who Should Attend?

Individuals who:

- Need to program advanced ladder logic instructions or
- Set up and configure SLC 500 systems for DH+ and/or remote I/O communications

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Experience with basic control and electrical principles
- Completion of the *SLC 500 and RSLogix 500 Programming* course (CCPS41)

SLC 500 and PLC-5 Communications

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCPS65

1 Day CEUs 0.7

Course Purpose

This blended-media course introduces students to the communication capabilities of RSLinx® software. This course gives students the needed skills required to configure and manage various communications options between RSLinx software and RSLogix 500 or RSLogix 5 software. Using features built into RSLinx software, students will learn how to monitor, optimize, and diagnose industrial network communications.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Configure a Data Highway Plus (DH+) communications and serial driver in RSLinx software
- Navigate RSLinx software
- Download and upload a project
- Go online to an SLC 500 or PLC-5 processor
- Change the processor operating mode
- Determine available system resources on RSLinx software
- Apply diagnostic tools and utilities
- Configure client application communications

Who Should Attend?

Individuals who are responsible for programming or maintaining and troubleshooting SLC 500 or PLC-5 applications using RSLogix 500 or RSLogix 5 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Experience maintaining electrically controlled systems
- Completion of the *PLC-5/SLC 500 and RSLogix Fundamentals* course (CCP122) or a fundamental knowledge of programmable controllers

Job Aids Included	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
RSLogix 5 and PLC-5 Procedures Guide	ABT-1785-TSJ53
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

MicroLogix™ 1400 Processor Installation and Data Monitoring

International Association for Continuing Education and Training

CCPM41

1 Day CEUs 0.7

Course Purpose

This course provides students with the resources and hands-on practice required to efficiently install a MicroLogix 1400 processor and monitor data. Each lesson in this course is devoted to a step in the installation and data monitoring sequence. Students will begin by learning about the hardware features of the MicroLogix 1400 processor. Next, students will install their own MicroLogix processor on a DIN Rail. Students will then learn a step-by-step procedure on how to monitor data using the LCD and keypad. Students will be given an opportunity to apply what you have learned by monitoring data in your MicroLogix 1400 processor. Students can take the installed and programmed MicroLogix processor home for additional practice.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Install the processor
- Use the LCD and keypad
- Monitor user defined target files
- Use the mode switch and user defined LCD
- Configure the Ethernet port on the processor

Who Should Attend?

Individuals who need to install and monitor data on a MicroLogix 1400 processor

Difficulty Level Intermediate

Prerequisites

- Completion of the *PLC-5/SLC 500 and RSLogix Fundamentals* course (CCP122)
- Basic experience with MicroLogix processors or SLC processors (including the ability to go online and program basic ladder logic)

MicroLogix 1400 Processor Embedded Web Server Management

International Association for Continuing Education and Training

CCPM43

1 Day CEUs 0.7

Course Purpose

This course provides students with the resources and hands-on practice required to efficiently monitor data for their MicroLogix1400 processor remotely over an Ethernet/IP network. Each lesson in the course is devoted to a step in the process of accessing processor and control systems data with remote access applications. After each procedure has been demonstrated, students will be given an opportunity to apply what they have learned by accessing a simple web page view and the custom designed user-provided page views. Students will receive a kit of hardware in this course. Students can take the installed and programmed MicroLogix processor home for additional practice.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Understand the embedded web server
- Monitor processor diagnostics
- Configure server settings and user accounts
- Understand simple web pages
- Generate user-provided web pages
- Optional: Configure an Ethernet network

Who Should Attend?

Individuals who need to remotely access processor and control system data for MicroLogix 1400 processor

Difficulty Level Intermediate

Prerequisites

- Completion of the *PLC-5/SLC 500 and RSLogix Fundamentals* course (CCP122)
- Basic experience with MicroLogix processors or SLC processors (including the ability to go online and program basic ladder logic)

MicroLogix 1400 Processor Installation, Data Monitoring, and Embedded Web Server Management

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCPM44 *

2 Days CEUs 1.4

Course Purpose

This course provides students with the resources and hands-on practice required to efficiently install a MicroLogix 1400 processor and monitor data. Students will begin by learning about the hardware features of the MicroLogix 1400 processor. Next, students will install their own MicroLogix processor on a DIN Rail. Students will then learn a step-by-step procedure on how to monitor data using the LCD and keypad. Students will also be given the resources and hands-on practice required to efficiently monitor data for your MicroLogix 1400 processor remotely over an Ethernet network. Students will learn to access control systems data with remote access applications. Students will be given an opportunity to access a simple web page view and the custom user-provided page views. Students can take the installed and programmed MicroLogix system home for additional practice.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Install the processor
- Use the LCD and keypad
- Monitor user defined target files
- Use the mode switch and user defined LCD
- Configure the Ethernet port on the processor
- Understand the embedded web server
- Monitor processor diagnostics
- Configure server settings and user accounts
- Understand simple web pages
- Generate user-provided web pages

*** Course CCPM44 is a combination class of courses CCPM41 and CCPM43**

Who Should Attend?

Individuals who need to install a MicroLogix 1400 processor, monitor data, and work with the embedded web server

Difficulty Level Intermediate

Prerequisites

- Completion of the *PLC-5/SLC 500 and RSLogix Fundamentals* course (CCP122)
- Basic experience with MicroLogix processors or SLC processors (including the ability to go online and program basic ladder logic)

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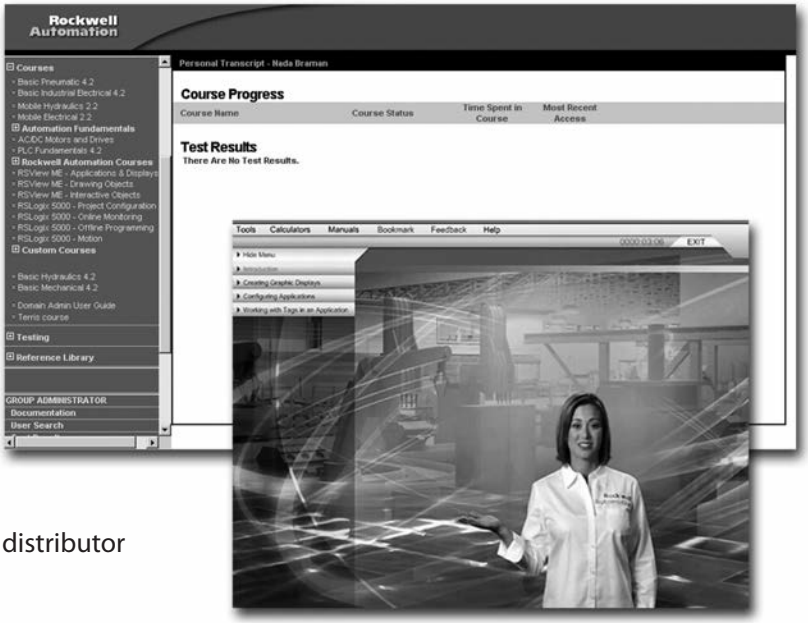
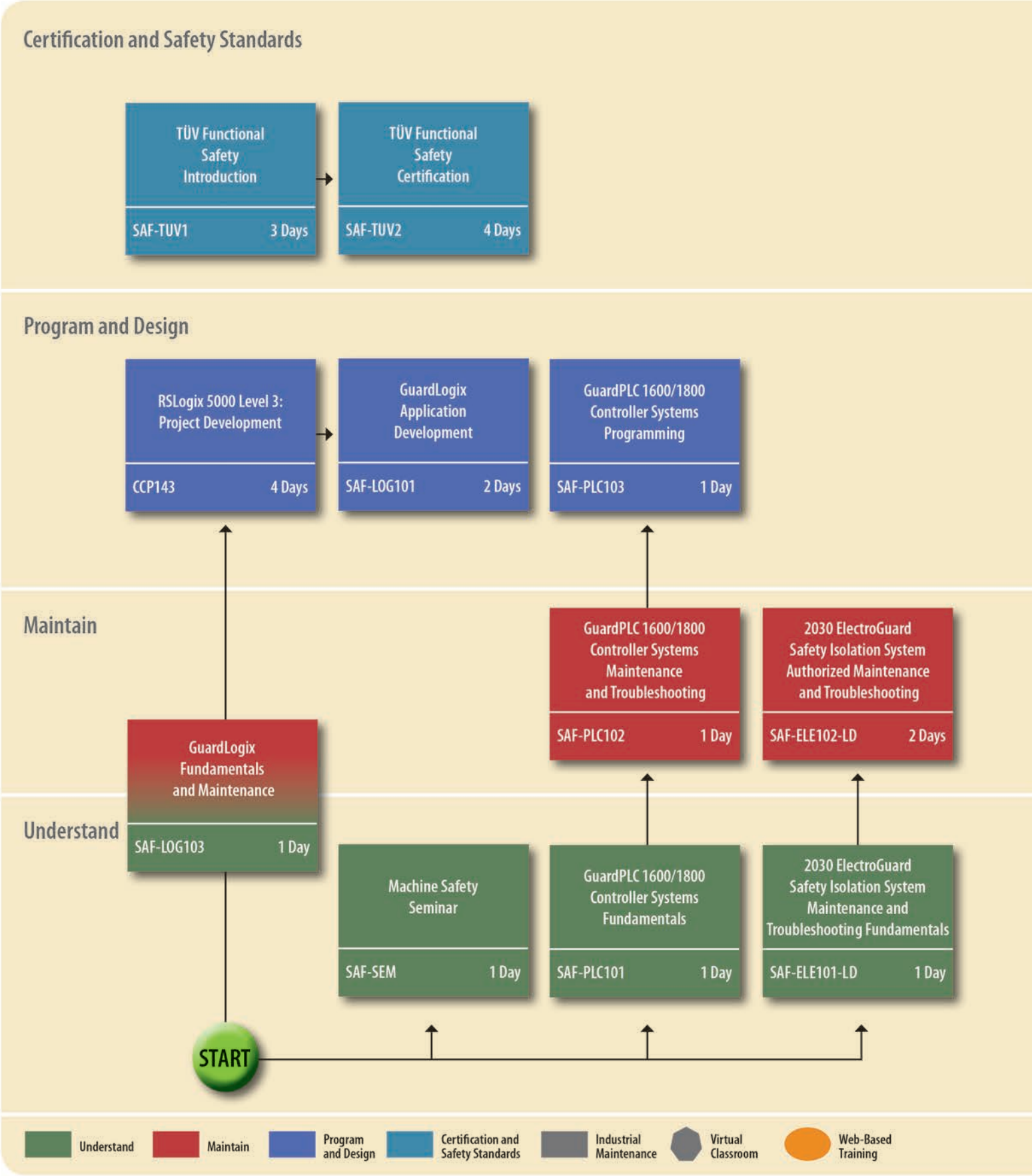


Call 440-646-3434 (option 4) or contact your local Rockwell Automation sales office or Allen-Bradley distributor for more information.

Safety

Safety Curriculum Map



Related Safety Courses

Refer to the Industrial Maintenance section of the catalog for course descriptions.

Lock-out/Tag-out Implementation SAF-SFT100 — 1 Day	NFPA 70E – Electrical Safety and Arc Flash Compliance SAF-SFT112 — 2 Days
Electrical Safety Awareness SAF-SFT101 — 1 Day	Lock-out/Tag-out Implementation and Arc Flash Awareness SAF-SFT117 — 2 Days
NFPA 70E: Arc Flash Awareness SAF-SFT106 — 1 Day	Plant Floor Arc Flash/LOTO/Confined Space Safety SAF-SFT123 — 4 Days
Machine Functional Safety and ISO 13849 System Design: Risk Assessment VC-MFSISO-01 120-Min. Session	2011 National Electrical Code (NEC) Change Awareness SAF-SFT12011 — 3 Days
Arc Flash Awareness VC-SFT106 (4) 90-Min. Sessions	Industrial Safety

Machine Safety Seminar

SAF-SEM

1 Day

Course Purpose

This seminar provides students with the foundation to better understand current safety regulations. Students should learn how to review and recommend changes or improvements to existing machine safeguards. Students should also learn how to reduce risk with machine safeguarding systems based on safety standards and risk assessment. Students will also be presented with strategies to reduce safety issues that interfere with their machine uptime. In addition, students should understand how to ensure their machine safeguarding will pass the next OSHA inspection.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify the building blocks to a successful machine safety program, as well as OSHA requirements and insights to compliance
- List key points of ANSI machine tool standards
- Employ basic risk assessment methodology
- Understand safety circuit design in compliance with ANSI and NFPA standards including circuit reliability levels
- Apply general application knowledge relating to safeguarding of devices

Who Should Attend?

Individuals who:

- need to better understand the current safety regulations
- are being asked to review and recommend changes or improvements to existing machine safeguards
- want to learn how to reduce risk with machine safeguarding systems based on safety standards and risk assessment
- have machine uptime affected by safety issues
- are responsible for ensuring your machine safeguarding will pass the next OSHA inspection

Difficulty Level Beginner

Prerequisites

There are no prerequisites for this course, but basic experience in a plant environment is recommended.

GuardPLC™ 1600/1800 Controller Systems Fundamentals

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

SAF-PLC101

1 Day CEUs 0.7

Course Purpose

This course is a skill-building opportunity for students who want to develop a fundamental knowledge of GuardPLC 1600/1800 systems and RSLogix Guard PLUS software. Students will be introduced to GuardPLC safety standards, functionality and controller circuitry, controller components, and distributed I/O modules. Students will have hands-on opportunities to use RSLogix Guard PLUS software to establish communications with a controller. This course provides students with the resources and hands-on practice required to download a project to a GuardPLC 1600 controller and start a routine.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Understand the safety principles of a GuardPLC system
- Understand the functionality of a GuardPLC system
- Identify GuardPLC 1600/1800 system components
- Get started with RSLogix Guard PLUS software
- Configure communications for a GuardPLC 1600/1800 controller
- Download and start the RSLogix Guard PLUS project

Who Should Attend?

Individuals who have no or little experience using GuardPLC 1600/1800 controllers

Difficulty Level Beginner

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Experience with industrial control applications is recommended

Job Aids Included	Catalog #
RSLogix Guard PLUS and GuardPLC Procedures Guide	ABT-1753-TSJ50
GuardPLC Documentation Reference Guide CD	ABT-1753-DRG70

2030 ElectroGuard® Safety Isolation System Maintenance and Troubleshooting Fundamentals

SAF-ELE101-LD

1 Day

Course Purpose

This course will help provide students with the fundamental skills needed to operate, start up, maintain, and troubleshoot an ElectroGuard Safety Isolation System. The instructor will describe and demonstrate basic system functionality and procedures for checkout, troubleshooting, and preventive maintenance. Students will then practice these procedures using ElectroGuard Safety Isolation System modules. Highlights of this course include working on an ElectroGuard system equipped with expansion, communication, and pneumatic isolation modules.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Overview of ElectroGuard modules, including power panel, control module, expansion module, remote lockout station, pneumatic isolation module
- Perform system checkout
- Troubleshoot an ElectroGuard system
- Interpret the status indicator lights
- Replace ElectroGuard modules
- Create a service log
- Perform preventive maintenance

This course is intended for maintainers or programmers. Some topics may be similar to topics covered in course SAF-ELE102-LD.

Who Should Attend?

Individuals who need to maintain and troubleshoot an ElectroGuard Safety Isolation System

Difficulty Level Beginner

Prerequisites

- General knowledge of electrical principles, circuits, and safety practices
- Ability to perform lockout/tagout procedures
- Experience using a multimeter and reading an electrical schematic
- Ability to interpret an electrical schematic

GuardLogix® Fundamentals and Maintenance

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

SAF-LOG103

1 Day CEUs 0.7

Course Purpose

This course will assist students in developing and building a solid foundation with a fundamental knowledge of a GuardLogix system. Upon completion of this course, students should be able to efficiently troubleshoot a previously operational GuardLogix system. Students will have the opportunity to develop and practice these skills by learning basic GuardLogix concepts and terminology and troubleshooting a GuardLogix project.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Understand GuardLogix controller safety operation
- Identifying GuardLogix system hardware and project components
- Download and upload a GuardLogix project
- Troubleshoot GuardLogix controller components
- Troubleshoot and replace GuardLogix CompactBlock guard I/O safety modules

Who Should Attend?

Individuals who need to monitor and troubleshoot RSLogix 5000 projects and hardware for GuardLogix controllers

Difficulty Level Beginner

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 1: ControlLogix Systems Fundamentals* course (CCP146) and *RSLogix Level 2: ControlLogix Maintenance and Troubleshooting* course (CCP153) or equivalent experience with RSLogix 5000 software
- General experience with industrial controls

Job Aids Included	Catalog #
GuardLogix Documentation Reference Guide CD	ABT-GRDLX-DRG70

GuardPLC 1600/1800 Controller Systems Maintenance and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

SAF-PLC102

1 Day CEUs 0.7

Course Purpose

This course provides students with the necessary resources and hands-on practice to efficiently maintain an RSLogix Guard PLUS project and troubleshoot a GuardPLC controller. It builds upon students' fundamental knowledge of common controller terms and operation, and students' ability to save, compile code, and download a project. This course adds to students' skill sets by introducing new tasks, such as creating and connecting signals, modifying a function block program, and troubleshooting problems with the controller. Students will also learn offline and online monitoring, testing of a routine, forcing project signals, and configuring and exporting diagnostic logs for locating errors and simulating test conditions that do not occur in normal operation.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Modify and download an RSLogix Guard PLUS project
- Configure and export GuardPLC diagnostic logs
- Troubleshoot GuardPLC 1600/1800 controller errors
- Monitor and test an RSLogix Guard PLUS routine
- Force an RSLogix Guard PLUS project signal
- Archive and restore an RSLogix Guard PLUS project

Job Aids Included	Catalog #
RSLogix Guard PLUS and GuardPLC Procedures Guide	ABT-1753-TSJ50
GuardPLC Documentation Reference Guide CD	ABT-1753-DRG70

Who Should Attend?

Individuals who:

- Need to maintain RSLogix Guard PLUS projects
- Troubleshoot GuardPLC controllers

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *GuardPLC 1600/1800 Controller Systems Fundamentals* course (SAF-PLC101)
- Experience with industrial control applications is recommended

2030 ElectroGuard Safety Isolation System Authorized Maintenance and Troubleshooting

SAF-ELE102-LD

2 Days

Course Purpose

This course will help provide students with the skills and authorization level needed to maintain and troubleshoot the factory-sealed modules of a Bulletin 2030 ElectroGuard Safety Isolation System. The instructor will describe and demonstrate procedures for module checkout, troubleshooting, and preventative maintenance. Highlights of this course include working on an ElectroGuard system equipped with expansion, communication, and pneumatic isolation modules. This course will also provide students with opportunities to practice troubleshooting module faults.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Perform module checkout
- Break the factory seal of an ElectroGuard module
- Troubleshoot within the module
- Interpret status indicator lights
- Replace the module seal
- Create a service log
- Perform preventive maintenance
- Troubleshoot an ElectroGuard system to the component level
- Understand functional specifications of ElectroGuard modules, including power panel, control module, expansion module, remote lockout station, and pneumatic isolation module

This course is intended for maintainers. Some topics may be similar to topics covered in course SAF-ELE101-LD.

Who Should Attend?

Individuals who:

- Need to maintain and troubleshoot an ElectroGuard System
- Require authorization to repair sealed modules

Difficulty Level Intermediate

Prerequisites

- General knowledge of electrical principles, circuits, and safety practices
- Ability to perform lockout/tagout procedures
- Experience using a multimeter
- Ability to interpret an electrical schematic
- Completion of the *2030 ElectroGuard Safety Isolation System Maintenance and Troubleshooting Fundamentals* course (SAF-ELE101-LD) or equivalent experience

RSLogix 5000 Level 3: Project Development

International Association for Continuing Education and Training

CCP143

4 Days CEUs 2.8

Course Purpose

Given a functional specification for a Logix5000 application, students will be able to develop a project during the course to meet the specification requirements. This course covers tasks common to all controllers that use the Logix5000 control engine or operating system, including ControlLogix, FlexLogix™, CompactLogix™, SoftLogix™, and DriveLogix™ controllers. This course instructs students on project development tasks, including organizing a project, organizing data, and configuring modules

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Communicate with a controller
- Create and organize a new project
- Enter, edit, and verify ladder logic
- Communicate with a Logix5000 controller and remote I/O module
- Configure a controller to share produce and consume data
- Create a periodic and event task
- Retrieve and set controller status values with GSV/SSV instructions
- Document, search, and manage project files
- Allocate connections
- Develop an add-on instruction in ladder diagram
- Configure a message

Who Should Attend?

Individuals who need to develop projects for Logix5000 applications

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 1: ControlLogix System Fundamentals* course (CCP146) or *RSTrainer for ControlLogix Fundamentals* computer-based training (9393-RSTCLX) or equivalent experience
- Completion of the *RSLogix 5000 Level 2: Basic Ladder Logic Programming* course (CCP151) or equivalent experience

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

GuardLogix Application Development

International Association for Continuing Education and Training

SAF-LOG101

2 Days CEUs 1.4

Course Purpose

Upon completion of this course, students will be able to create an RSLogix 5000 project for a GuardLogix system and maintain the system. Students will have the opportunity to develop and practice these skills by: learning safety principles of a GuardLogix system; learning basic concepts and terminology used with GuardLogix system hardware and RSLogix 5000 software; creating and configuring a GuardLogix project; generating safety signatures and lock/unlock a GuardLogix controller.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Create a new GuardLogix project using RSLogix 5000 software
- Configure CompactBlock I/O safety modules for a GuardLogix project using RSLogix 5000 software
- Get CompactBlock Guard I/O point status information via explicit messaging using RSLogix 5000 software
- Configure a GuardLogix controller to produce and consume safety data over EtherNet/IP
- Configure GuardLogix controller safety option
- Program a dual-channel input stop instruction and dual-channel input stop with test and mute instruction
- Program a configurable redundant output instruction
- Program a five position mode selector instruction
- Program a safety mat instruction

Who Should Attend?

Individuals who need to develop RSLogix 5000 projects for GuardLogix controllers

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 3: Project Development* course (CCP143) and *GuardLogix Fundamentals and Maintenance* course (SAF-LOG103).
- General experience with industrial controls

Job Aids Included	Catalog #
GuardLogix Documentation Reference Guide CD	ABT-GRDLX-DRG70

GuardPLC 1600/1800 Controller Systems Programming

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

SAF-PLC103

1 Day CEUs 0.7

Course Purpose

This course provides students with the necessary resources and hands-on practice to effectively program an RSLogix Guard PLUS project for GuardPLC controller communications with other devices, such as an OPC server and another controller. This course adds to students' skill set by introducing new tasks, such as creating user-defined function blocks, configuring a distributed I/O module, and configuring OPC and peer-to-peer communications. Students will also learn how to configure user accounts for restricting access to windows of an RSLogix Guard PLUS project and for performing certain tasks on a GuardPLC controller.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Create an RSLogix Guard PLUS function block routine
- Configure a GuardPLC distributed I/O module
- Create RSLogix Guard PLUS project user accounts
- Configure a GuardPLC OPC server
- Configure GuardPLC peer-to-peer communications

Job Aids Included	Catalog #
RSLogix Guard PLUS and GuardPLC Procedures Guide	ABT-1753-TSJ50
GuardPLC Documentation Reference Guide CD	ABT-1753-DRG70

Who Should Attend?

Individuals who:

- Need to program an RSLogix Guard PLUS project
- Configure a GuardPLC controller to communicate with other devices

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *GuardPLC 1600/1800 Controller Systems Fundamentals* course (SAF-PLC101)
- Completion of the *GuardPLC 1600/1800 Controller Systems Maintenance and Troubleshooting* course (SAF-PLC102)
- Experience with industrial control applications is recommended

TÜV Functional Safety Introduction

SAF-TUV1

3 Days

Course Purpose

In this course, an introduction to the defined requirements regarding the design and the proof of Functional Safety of machines, in respect to the current standards and guidelines, are described and discussed in detail. Examples from practice will demonstrate possibilities regarding machine protection. Students will learn how safety devices and safety components are assembled and applied to reduce hazards from machinery so the necessary safety for people and the environment is guaranteed. In addition to the technical requirements, information about organization measures as well as quality assurance and documentation for the life-cycle design and validation will be taught. After completing this course, students will have the knowledge necessary to attend the next level of TÜV Functional Safety training, SAF-TUV2.

Course Objectives

After completing this course, students will understand the following topics:

- TÜV Functional Safety certification
- OSHA guidelines and requirements
- ISO 12100 risk analysis, ISO 13894-1:1999 (EN-954-1), ISO 13849-1:2006, and IEC 62061
- Validation, circuits, schematics, and new standards regarding safety of machinery

Students will also be able to perform the following tasks:

- Recognize European guidelines/standards and safety functions of machines
- Identify safety devices

Who Should Attend?

Application engineers, system integrators, developers, safety specialists, and authorized experts in machinery

Difficulty Level Intermediate

Prerequisites

It is highly recommended that participants for the training have professional experience in the field of Functional Safety or have attended another introduction course on Functional Safety.

TÜV Functional Safety Certification

SAF-TUV2

4 Days

Course Purpose

In this course, the defined requirements regarding the design and the proof of Functional Safety of machines in respect to the current standards and guidelines are described and discussed in detail. Examples from practice will demonstrate possibilities regarding machine protection. Students can learn how safety devices and safety components are assembled and applied to reduce hazards from machinery so the necessary safety for people and environment is guaranteed. In addition to the technical requirements, information about organizational measures and quality assurance and documentation for the lifecycle design and validation will be passed on. The first 3.5 days are classroom instructions that provide detailed information and example/discussions for understanding and mastering the requirements of EN/IEC 62061, EN/ISO 12100, EN/ISO 13849-1, -2, EN/IEC 60204, IEC 61508-part 1…7, and other relevant machine functional safety standards. The last day of the training ends with an exam, which must be passed to receive the TÜV Functional Safety Engineer certificate. The training can also be attended without taking the exam.

Course Objectives

After completing this course, students will understand the following topics:

- TÜV Functional Safety certification
- Risk analysis
- ISO 13849-1:1999 (EN 954-1), EN ISO 13849-1:2008, and EN 62061:2005
- Validation, circuits, schematics, and new standards regarding safety of machinery

Students will also be able to perform the following tasks:

- Recognize European guidelines/standards and safety functions of machines
- Identify safety devices

Who Should Attend?

Application engineers, system integrators, developers, safety specialists and authorized experts in machinery

Difficulty Level Intermediate

Prerequisites

- Recommended completion of the *TÜV Functional Safety Introduction* course (SAF-TUV1), but not mandatory

Exam and Eligibility Requirements for TÜV Functional Safety Engineer

The following requirements must be met in order to receive the TÜV Functional Safety Engineer certificate:

- Minimum of 3-5 years experience in the field of Functional Safety
- University engineering degree (master's or bachelor's) or equivalent engineer level responsibilities and status certified by employer
- Completion of eligibility form from Rockwell Automation/TÜV Rheinland

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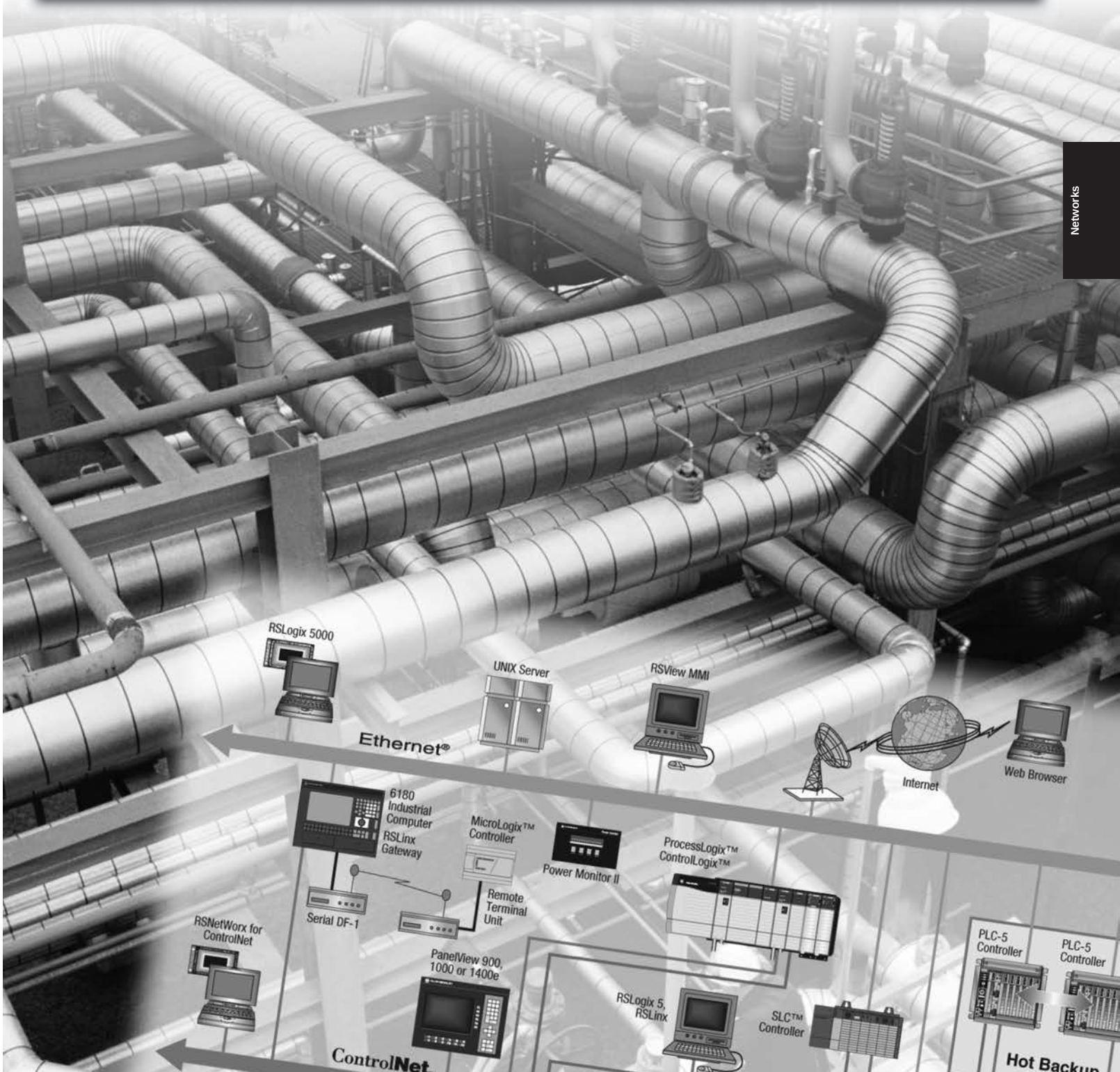
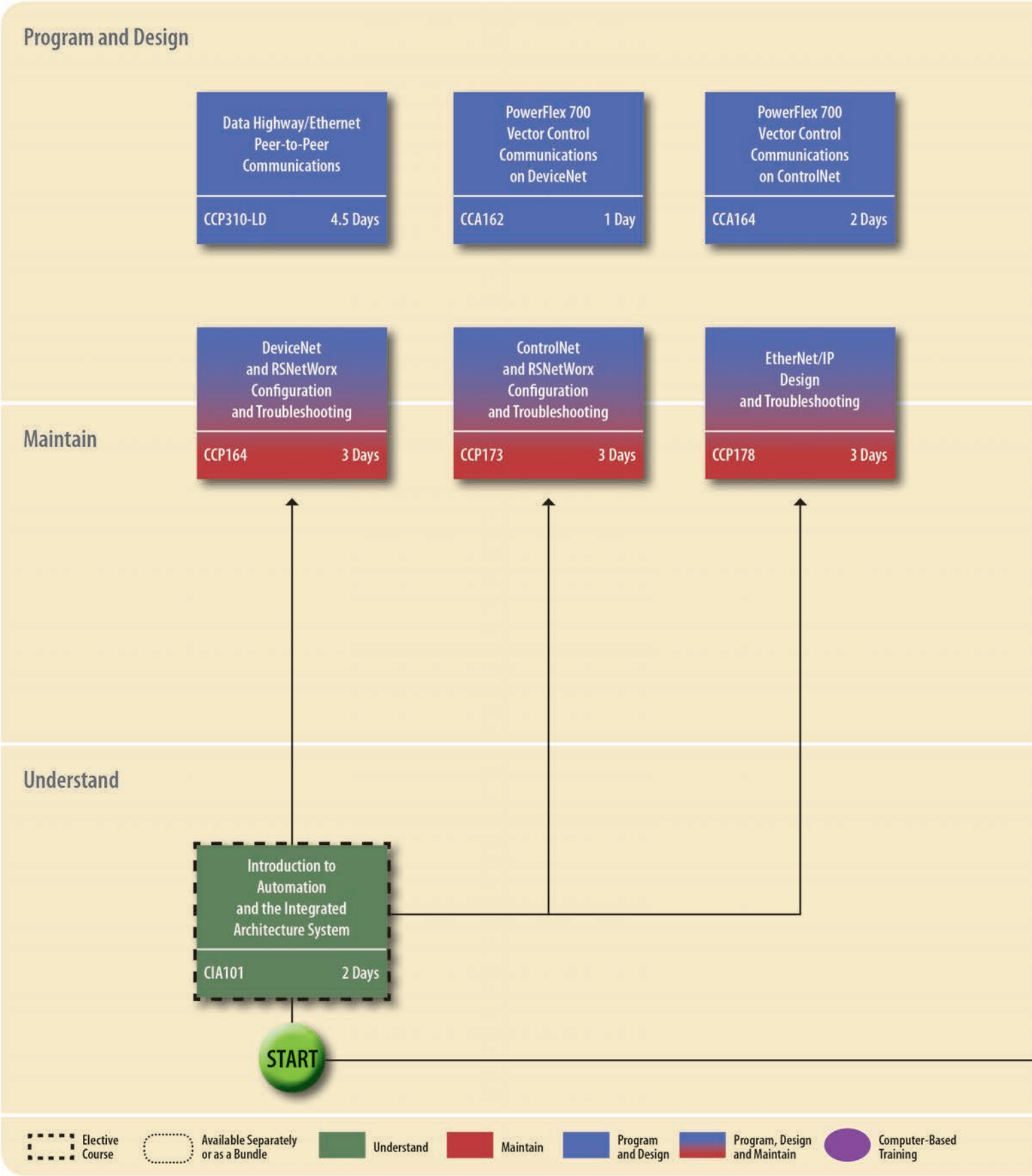
Networks


RSLogix 5000
UNIX Server
RSView MMI
Ethernet®
Internet
Web Browser
6180 Industrial Computer
RSLinx Gateway
MicroLogix™ Controller
Power Monitor II
ProcessLogix™ ControlLogix™
Serial DF-1
Remote Terminal Unit
RSNetWorx for ControlNet
PanelView 900, 1000 or 1400e
RSLogix 5, RSLinx
SLC™ Controller
PLC-5 Controller
PLC-5 Controller
Hot Backup
ControlNet

Networks Curriculum Map



NetLinx System Maintenance and Troubleshooting

CCP177 — 4 Days

* Combination of DeviceNet, ControlNet and EtherNet/IP Maintenance Topics

SLC 500 and PLC-5 Communications

CCPS65 — 1 Day

Related e-Learning Products

RSTrainer for EtherNet/IP - Hardware and IP Addressing
9393-RSTENET1ENE
9393-RSTENET1ENF

RSTrainer for EtherNet/IP - Communications and Diagnostics
9393-RSTSLCPENE
9393-RSTSLCPENF

RSTrainer for RSLinx Software
9393-RSTLINX
9393-RSTLINXENF

EtherNet/IP Bundle
9393-ENETAENE / 9393-ENETAENF

EtherNet/IP - Hardware and IP Addressing

EtherNet/IP - Communications and Diagnostics

RSTrainer Enterprise Edition

Web-Based Training

Introduction to Automation and the Integrated Architecture™ System

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CIA101

2 Days CEUs 1.4

Course Purpose

This course will assist students in developing and building a solid foundation of Integrated Architecture and automation system knowledge. Students will learn about and interact with a variety of automation hardware. They will also have an opportunity to use Rockwell Automation software to perform basic system configuration tasks. While performing these tasks, students will gain an understanding of how controllers, drives, motors, networks, and human-machine interface (HMI) products function together within Integrated Architecture.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Establish communications in an integrated system
- Program a basic RSLogix™ 5000 project for an integrated system
- Program with tag-based addressing in an integrated system
- Understand Logix5000™ multi-discipline control
- Understand NetLinx-enabled networks
- Understand the visualization development environment of an integrated system
- Understand HMI direct tag referencing in an integrated system

Who Should Attend?

Individuals who:

- Have little or no working experience with automation systems
- Are interested in gaining a broad understanding of automation and the Integrated Architecture System

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft® Windows® environment

SLC™ 500 and PLC-5® Communications

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCPS65

1 Day CEUs 0.7

Course Purpose

This blended-media course introduces students to the communication capabilities of RSLinx® software. This course gives students the needed skills required to configure and manage various communications options between RSLinx software and RSLogix™ 500 or RSLogix 5 software. Using features built into RSLinx software, students will learn how to monitor, optimize, and diagnose industrial network communications.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Configure a Data Highway Plus™ (DH+™) communications and serial driver in RSLinx software
- Navigate RSLinx software
- Download and upload a project
- Go online to an SLC 500 or PLC-5 processor
- Change the processor operating mode
- Determine available system resources on RSLinx software
- Apply diagnostic tools and utilities
- Configure client application communications

Who Should Attend?

Individuals who are responsible for programming or maintaining and troubleshooting SLC 500 or PLC-5 applications using RSLogix 500 or RSLogix 5 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Experience maintaining electrically controlled systems
- Completion of the *PLC-5/SLC 500 and RSLogix Fundamentals* course (CCP122) or a fundamental knowledge of programmable controllers

Job Aids Included	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
RSLogix 5 and PLC-5 Procedures Guide	ABT-1785-TSJ53
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

NetLinx System Maintenance and Troubleshooting

International Association for Continuing Education and Training

CCP177*

4 Days CEUs 2.8

Course Purpose

This course is designed to provide students with the necessary skills to effectively maintain and troubleshoot DeviceNet™, ControlNet™, and EtherNet/IP hardware and software. Students will build their skills by using troubleshooting best practices and network troubleshooting tools; gain experience troubleshooting DeviceNet, ControlNet, and EtherNet/IP networks by maintaining connectivity to the networks; and learn a variety of software packages and hardware indicators to ensure that the Logix5000 controllers and devices on the networks maintain communications to sustain optimal performance.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify NetLinx networks and hardware components of an EtherNet/IP system
- Connect a computer to a Logix5000 system over an EtherNet/IP network
- Troubleshoot EtherNet/IP network media components
- Monitor/troubleshoot EtherNet/IP media components
- Identify ControlNet media components/signal measuring equipment
- Connect to a ControlNet network using RSLinx classic software
- Troubleshoot a scheduled ControlNet data connection for a ControlLogix controller
- Troubleshoot a ControlNet network using RSNetWorx for ControlNet software
- Identify DeviceNet network components
- Commission nodes on, and troubleshoot, a DeviceNet network

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 1: ControlLogix System Fundamentals* (CCP146) course or equivalent experience

This course is intended for maintainers. Some topics may be similar to topics covered in courses CCP164, CCP173, and CCP178.

Who Should Attend?

Individuals who are responsible for maintaining and troubleshooting existing DeviceNet, ControlNet, and EtherNet/IP networks

Difficulty Level Intermediate

Job Aids Included	Catalog #
ControlNet and RSNetWorx Troubleshooting Guide	ABT-N200-TSJ20
ControlNet and RSNetWorx Procedures Guide	ABT-N200-TSJ50
ControlNet Documentation Reference Guide CD	ABT-N200-DRG70
DeviceNet and RSNetWorx Troubleshooting Guide	ABT-N100-TSJ20
DeviceNet and RSNetWorx Procedures Guide	ABT-N100-TSJ50
DeviceNet Documentation Reference Guide CD	ABT-N100-DRG70
EtherNet/IP Procedures Guide	ABT-N300-TSJ50
EtherNet/IP Documentation Reference Guide CD	ABT-N300-DRG70
RSLogix 5000 and Logix 5000 Procedures Guide	ABT-1756-TSJ50
Logix 5000 Documentation Reference Guide	ABT-1756-DRG70

* Combination of DeviceNet, ControlNet, and EtherNet maintenance topics

DeviceNet and RSNetWorx Configuration and Troubleshooting

International Association for Continuing Education and Training

CCP164

3 Days CEUs 2.1

Course Purpose

This course prepares students to successfully design and configure an efficient DeviceNet network using components for the ControlLogix platform. To meet this objective, students begin by designing a cable system, and then configure a driver, a scanner module, and network devices. This course also prepares students to troubleshoot a malfunctioning DeviceNet network and return it to normal operation with minimum downtime. Students will first verify proper network installation and then perform both hardware and software-based tasks used to isolate DeviceNet problems, as well as practice the tasks necessary to add and replace network devices.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify network components and design a DeviceNet cable system
- Create a DeviceNet network configuration
- Commission nodes on a DeviceNet network
- Configure a 1756-DNB DeviceNet scanner module
- Map inputs and outputs on a DeviceNet network
- Manage DeviceNet EDS files
- Configure Automatic Device Recovery (ADR) on a DeviceNet network
- Communicate on a DeviceNet network using explicit messaging
- Modify a DeviceNet network configuration
- Troubleshoot a network using RSNetWorx for DeviceNet software
- Troubleshoot a network using hardware indicators
- Troubleshoot a network using RSLogix 5000 software
- Troubleshoot duplicate node addresses on a DeviceNet network
- Restoring a malfunctioning DeviceNet network to normal operation

Who Should Attend?

Individuals who are:

- Responsible for designing and configuring a new DeviceNet network
- Responsible for isolating and correcting problems or performing basic maintenance on a DeviceNet network

Difficulty Level Intermediate

Prerequisites:

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 1: ControlLogix System Fundamentals* course (CCP146), or
- Knowledge of common ControlLogix terminology and the ability to program and interpret basic ladder logic instructions in RSLogix 5000 software

Job Aids Included	Catalog #
DeviceNet and RSNetWorx Troubleshooting Guide	ABT-N100-TSJ20
DeviceNet and RSNetWorx Procedures Guide	ABT-N100-TSJ50
DeviceNet Documentation Reference Guide CD	ABT-N100-DRG70

ControlNet™ and RSNetWorx™ Configuration and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP173

3 Days CEUs 1.4

Course Purpose

This course provides students with the skills necessary to efficiently design and configure a ControlNet network. Students will gain these skills from the ground up, practicing each step in the design and configure process from choosing the correct cable to configuring the connections that will transmit data from ControlLogix (Logix5000) controllers and other devices across that cable. This course also provides students with the skills needed to safely and efficiently return a malfunctioning network to normal operation. The instructor will introduce a logical process for troubleshooting ControlNet and RSNetWorx components and demonstrate how to identify problems with communications cards, cabling, and other network hardware.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Design a ControlNet and RSNetWorx media system
- Go online to a ControlNet and RSNetWorx network
- Enter and troubleshoot a scheduled ControlNet and RSNetWorx I/O data connections for Logix5000 controllers
- Troubleshoot a ControlNet and RSNetWorx network using RSNetWorx for ControlNet software
- Isolate faulty ControlNet and RSNetWorx media using signal measurement equipment
- Isolate ControlNet and RSNetWorx network malfunctions using LEDs and mnemonic displays
- Identify a ControlNet and RSNetWorx network malfunction using RSLinx software

Who Should Attend?

Individuals who are:

- Responsible for designing/configuring a new ControlNet &RSNetWorx network
- Managing/modifying an existing ControlNet & RSNetWorx network

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Experience with Windows-based programming software (RSLogix 5000)

Job Aids Included	Catalog #
ControlNet and RSNetWorx Procedures Guide	ABT-N200-TSJ50
ControlNet and RSNetWorx Troubleshooting Guide	ABT-N200-TSJ20
ControlNet Documentation Reference Guide CD	ABT-N200-DRG70

EtherNet/IP Design and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP178

3 Days CEUs 2.1

Course Purpose

This course prepares students to successfully design and configure an efficient EtherNet/IP (Industrial Protocol) network by managing both the bandwidth requirements for a project and the number of connections on the network. Students will configure a Stratix 6000 switch for viewing and controlling network traffic, restricting traffic overload, and protecting against unauthorized device access. This course also prepares students to effectively resolve the breakdown in communications between a controller and the devices it is controlling. Students will troubleshoot EtherNet/IP network media components and use web-based technologies imbedded within multiple EtherNet/IP devices to monitor the health and status of the EtherNet/IP network.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Design an EtherNet/IP cable system and optimize an EtherNet/IP network
- Ping a module's EtherNet/IP address
- Configure and modify EtherNet/IP addresses using RSLinx® software, RSLogix™ 5000 software, and BOOTP-DHCP server software
- Establish EtherNet/IP connections to remote devices
- Produce and consume data over an Ethernet/IP network
- Communicate between multiple controllers on an Ethernet/IP network using a message instruction
- Configure the Stratix 6000 Ethernet switch
- Troubleshoot EtherNet/IP network media components
- Monitor an EtherNet/IP network using web-enabled technologies

Who Should Attend?

Individuals responsible for designing and configuring a new EtherNet/IP network or modifying and troubleshooting an existing EtherNet/IP network

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- *RSLogix 5000 Level 2: Basic Ladder Logic Programming* course (CCP151) and/or *RSLogix 5000 Level 3: Project Development* course (CCP143) or equivalent experience with RSLogix 5000 software

Job Aids Included	Catalog #
EtherNet/IP Procedures Guide	ABT-N300-TSJ50
EtherNet/IP Documentation Reference Guide CD	ABT-N300-DRG70

Data Highway/Ethernet Peer-to-Peer Communications

CCP310-LD

4.5 Days

Course Purpose

This course provides students with an overall systems approach of how Data Highway Plus™ (DH+™) and Ethernet networks relate to both programmable controllers and computers. General network architectures are discussed along with system interconnections, cabling, and installation. Students will be introduced to programming for controllers relative to the DH+ and EtherNet networks. Students will also learn about the structure of DH+ and EtherNet communication protocols.

Course Objectives

After completing this course, students will understand the following topics:

- DH+ and Ethernet topologies
- Token passing protocol
- Channel diagnostics
- PLC-5 channel buffers
- PC-PLC-5 communications
- PLC-5-to-PLC-5 remote communications
- Ethernet protocols
- PLC-5, SLC-5/05, and ControlLogix CIP Ethernet messages
- SLC-5/04 and ControlLogix DH+ messages

Who Should Attend?

Individuals who are responsible for designing, developing, or system programming PLC-5, SLC 500, or ControlLogix peer-to-peer communications over DH+ or Ethernet networks

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *PLC-5 Programming* course (CCP410)
- Completion of the *SLC-500 Programming* course (CCPS41)
- Completion of the *ControlLogix Project Development* course (CCP143)

PowerFlex® 700 Vector Control Communications on DeviceNet

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCA162

1 Day CEUs 0.7

Course Purpose

This skill-building course introduces techniques and instructions that will assist students in successfully configuring a PowerFlex 700 vector control drive to communicate on an existing DeviceNet network. Throughout the course, students will learn how to use RSNetWorx for DeviceNet software to perform tasks, such as browsing the network, commissioning the PowerFlex 700 node, and configuring drive parameters. The students will also learn scanner module configuration and input and output mapping. Students will be given an application-based exercise that offers extensive hands-on practice using the PowerFlex 700 standard control drive and RSNetWorx for DeviceNet software.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Connect a drive to a DeviceNet network
- Commission a node on a DeviceNet network
- Configure drive and adapter parameters using RSNetWorx for DeviceNet software
- Manage DeviceNet EDS files for the drive
- Configure a DeviceNet scanner module to communicate with a drive
- Map drive inputs and outputs on a DeviceNet network

Job Aids Included	Catalog #
PowerFlex 700 Standard and Vector Control Procedures Guide	ABT-20B-TSJ50
DeviceNet and RSNetWorx Procedures Guide	ABT-N100-TSJ50
PowerFlex 700 Standard and Vector Control Documentation Reference Guide CD	ABT-20B-DRG70

Who Should Attend?

Individuals who are responsible for configuring PowerFlex 700 vector control drives to communicate on a DeviceNet network

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *AC/DC Motors and Drives Fundamentals* course (CCA101) or equivalent experience

PowerFlex 700 Vector Control Communications on ControlNet

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCA164

2 Days CEUs 1.4

Course Purpose

This skill-building course introduces techniques and instructions that will assist students in successfully starting up a PowerFlex 700 AC drive and commissioning it on a ControlNet network. Students will learn how to configure PowerFlex 700 drive parameters and install and commission a ControlNet communications adapter and learn to configure a ControlNet network and create network connections for Logix5000 controllers.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Configure PowerFlex 700 drive parameters using the LCD HIM, DriveExplorer™ software, and DriveExecutive™ software
- Upload and download PowerFlex 700 drive data
- Start up a PowerFlex 700 drive
- Install and configure a PowerFlex 700 drive ControlNet communications adapter
- Configure an offline ControlNet network
- Enter scheduled ControlNet I/O data connections for Logix5000 controllers
- Enter ControlNet messages for Logix5000 controllers
- Control PowerFlex 700 drive operation

Prerequisites

- Experience operating a computer within a Microsoft Window environment
- Completion of the *AC/DC Motors and Drives Fundamentals* course (CCA101)

Who Should Attend?

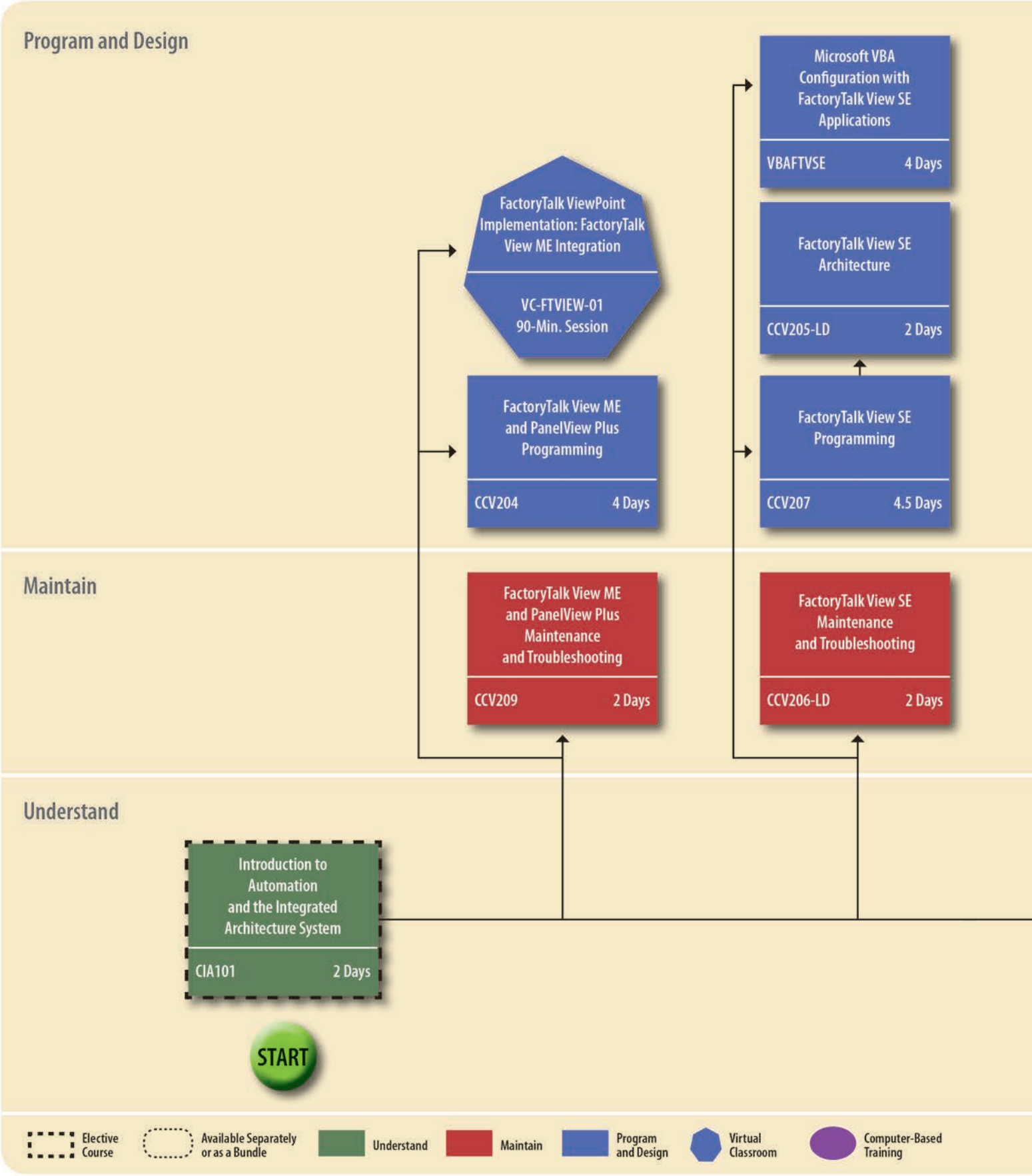
Individuals responsible for configuring parameters and starting up PowerFlex 700 drives

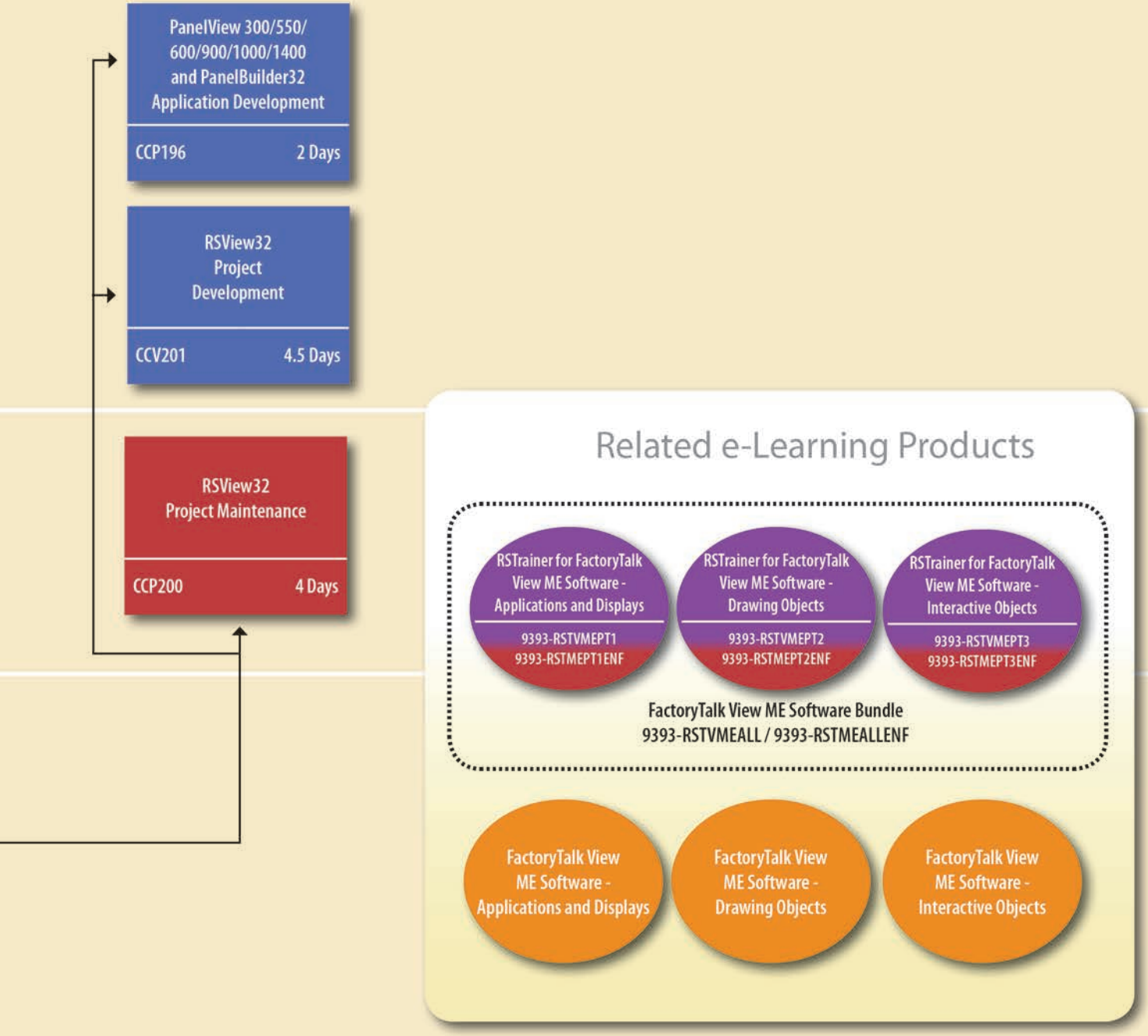
Difficulty Level Intermediate

Job Aids Included	Catalog #
PowerFlex 700 Standard and Vector Control Procedures Guide	ABT-20B-TSJ50
PowerFlex 700 Standard and Vector Control Documentation Reference Guide CD	ABT-20B-DRG70
PowerFlex 700 Standard and Vector Control Quick Reference Guide	ABT-20AB-TQR90
ControlNet and RSNetWorx Procedures Guide	ABT-N200-TSJ50

Visualization

Visualization Curriculum Map





RSTrainer Enterprise Edition

Web-Based Training

Introduction to Automation and the Integrated Architecture™ System

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CIA101

2 Days CEUs 1.4

Course Purpose

This course will assist students in developing and building a solid foundation of Integrated Architecture and automation system knowledge. Students will learn about and interact with a variety of automation hardware. Students will also have an opportunity to use Rockwell Automation software to perform basic system configuration tasks. While performing these tasks, students will gain an understanding of how controllers, drives, motors, networks, and HMI products function together within Integrated Architecture.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Establish communications in an integrated system
- Program a basic RSLogix™ 5000 project for an integrated system
- Program with tag-based addressing in an integrated system
- Understand Logix5000™ multi-discipline control
- Understand NetLinx-enabled networks
- Understand the visualization development environment of an integrated system
- Understand HMI direct tag referencing in an integrated system

Who Should Attend?

Individuals who:

- Have little or no working experience with automation systems
- Are interested in gaining a broad understanding of automation and the Integrated Architecture System

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft® Windows® environment

FactoryTalk® View ME and PanelView™ Plus Maintenance and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCV209

2 Day CEUs 1.4

Course Purpose

This course provides students with the skills necessary to maintain and troubleshoot FactoryTalk View Machine Edition (ME) applications that run on PanelView Plus terminals. This course also provides opportunities to work with both the hardware and software. During class, students will gain the hands-on skills required to prepare a PanelView Plus terminal for operation. Students will also work with FactoryTalk View ME software and RSLinx Enterprise software and will practice downloading FactoryTalk View ME applications to a PanelView Plus terminal.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Replace components on a PanelView Plus terminal
- Set options on a PanelView Plus terminal
- Manage runtime files on a PanelView Plus terminal
- Manage development files using the application manager
- Modify RSLinx Enterprise communications in a FactoryTalk View ME application
- Download and upload FactoryTalk View ME runtime files
- Troubleshoot a PanelView Plus terminal
- Create tags and test data in a FactoryTalk View ME application
- Modify graphic displays in a FactoryTalk View ME application
- View and print FactoryTalk View ME components using the application documenter

Who Should Attend?

Individuals who need to maintain FactoryTalk ME applications and troubleshoot PanelView Plus terminals

Difficulty Level Beginner

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 1: ControlLogix System Fundamentals* (CCP146) course or basic experience with ControlLogix tags and architecture.

Job Aids Included	Catalog #
FactoryTalk View ME and PanelView Plus Procedures Guide	ABT-2711P-TSJ50

FactoryTalk View SE Maintenance and Troubleshooting

International Association for Continuing Education and Training

CCV206-LD

2 Days CEUs 1.4

Course Purpose

This course is a maintenance and troubleshooting course that provides maintainers with a basic understanding of FactoryTalk View Site Edition (SE). This course provides the resources and hands-on practice required to understand the basic structure of a FactoryTalk View SE stand-alone or distributed application. Students will have an opportunity to navigate through FactoryTalk View SE software to learn to efficiently troubleshoot an application or system. Students will be introduced to topics such as system communications, data and diagnostics logging, trending, and redundancy.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Understand FactoryTalk View SE software
- Establish and maintain communications
- Monitor and interact with alarms
- Utilize diagnostics/data logging and trending
- Configure redundancy
- Development and operating tips

Who Should Attend?

Individuals who maintain FactoryTalk View SE projects

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Job Aids Included

FactoryTalk View SE Procedures Guide

Catalog #

ABT-9701SE-TSJ50

RSView®32 Project Maintenance

International Association for Continuing Education and Training

CCP200

4 Days CEUs 2.8

Course Purpose

This course is designed to provide students with the skills needed to maintain and modify an RSView32 human-machine interface (HMI) automation project used to control and monitor an operation. Students will use RSView32 software to practice the tasks associated with maintaining an existing RSView32 project by modifying functionality and features.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Configure direct driver, DDE, and OPC communications
- Modify the tag database and a tag monitor
- Create and modify graphic displays and objects
- Configure and run activity log files
- Configure trends, security, and startup settings
- Create macros and symbols
- Configure and run alarms
- Create and modify key definition control
- Create, modufy, and download recipe files
- Modify and run derived tag, parameter, and event files and data log models

This course is intended for maintainers. Some topics may be similar to topics covered in course CCV201.

Who Should Attend?

Individuals who:

- Need to maintain and modify an existing RSView32 project
- Need to control and monitor an operation using RSView32 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *PLC-5®/SLC™ 500 and RSLogix Fundamentals* course (CCP122) or the *RSLogix 5000 Level I: ControlLogix® System Fundamentals* course (CCP146)

Job Aids Included

RSView32 Procedures Guide

Catalog #

ABT-9301-TSJ50

FactoryTalk View ME and PanelView Plus Programming

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCV204

4 Days CEUs 2.8

Course Purpose

This course is a skill-building course that provides students with the skills necessary to develop FactoryTalk View Machine Edition (ME) applications that run on the next-generation PanelView Plus terminals. During class, students will gain hands-on skills, like preparing a PanelView Plus terminal for operation, creating a new application and run it on a terminal, creating/configuring/animating graphic objects on graphic displays, configuring security for granting/restricting access to certain graphic displays or for rights to perform certain actions, and creating/configuring messages and alarms for alerting operators to changes in a process.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Create and customize a FactoryTalk View ME application
- Configure a PanelView Plus terminal, RSLinx enterprise communications, FactoryTalk security, and display security
- Create and modify tags and graphic objects
- Add and configure graphic display
- Create and configure interactive controls, information messages, alarms, and macros
- Create and manage FactoryTalk View ME runtime files
- Configure basic animation for FactoryTalk View ME objects, recipes with the RecipePlus system, and language switching
- Create data logs and trends, tag placeholders, and parameter files
- Add global objects
- Insert faceplates

Who Should Attend?

Individuals who need to create FactoryTalk View ME applications for use on a PanelView Plus terminal

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 1: ControlLogix System Fundamentals* course (CCP146), or
- Basic experience with ControlLogix tags and architecture

Job Aids Included	Catalog #
FactoryTalk ME and PanelView Plus Procedures Guide	ABT-2711P-TSJ50
FactoryTalk ME Tutorial CD-ROM	

FactoryTalk ViewPoint Implementation: FactoryTalk View ME Integration

Virtual Classroom

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

VC-FTVIEW-01

90 Minutes CEUs 0.15

Course Purpose

This course will teach students how to monitor their FactoryTalk View ME projects in a web browser. This course will also show students how to create a new FactoryTalk View ME web application and connect to an existing FactoryTalk View ME web application via Ethernet from a PanelView Plus.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Verify client requirements
- Verify server requirements
- Create a new ME web application
- Connect to an existing ME web application
- Troubleshoot common integration problems

Who Should Attend?

Individuals who need to monitor installations from any remote location with Internet access, but without FactoryTalk View ME software

Difficulty Level Beginner

Prerequisites

Experience using FactoryTalk View ME software and PanelView Plus programming is required. Specifically, students must know how to create .apa files and download files to PanelView Plus terminals.

FactoryTalk View SE Programming

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCV207

4.5 Days CEUs 3.2

Course Purpose

This course will aid students in developing FactoryTalk View Site Edition (SE) applications. All aspects of the FactoryTalk View SE software are presented, followed by interactive hands-on lab assignments emphasizing application of the concepts in an industrial setting. Students will have the opportunity to create an application and build graphic displays. Students will also work with RSLinx® Enterprise communications software and the FactoryTalk diagnostics system.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Configure RSLinx enterprise drivers
- Configure OPC communications
- Create a network FactoryTalk View SE application
- Use graphic displays and global objects
- Configure security and alarms
- Create and configure a trend
- Use macros, symbols, and keys
- Add VBA display code
- Create an HMI tag database
- Use tag placeholders and create a FactoryTalk View SE client
- Create and view a data log model
- Create a derived tag tile and an event file

Who Should Attend?

Individuals who need to develop FactoryTalk View SE local applications

Difficulty Level Advanced

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Job Aids Included

FactoryTalk View SE Procedures Guide

Catalog #

ABT-9701SE-TSJ50

FactoryTalk View SE Architecture

CCV205-LD

2 Days

Course Purpose

This course will allow students to successfully deploy a finished FactoryTalk View SE distributed application. Building on students' knowledge of HMI (human-machine interface) application development and their experience with operating these systems, this course covers Windows networking basics, FactoryTalk View SE distributed application architecture guidelines, deployment of components for a distributed application, and troubleshooting.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify network/Windows considerations for a Distributed FactoryTalk View SE Application
- Design a FactoryTalk View SE network (distributed) application
- Evaluate FactoryTalk View SE system design using the reference system
- Add terminal services to a FactoryTalk View SE network system
- Implement FactoryTalk Security
- Install FactoryTalk View SE software
- Deploy a FactoryTalk View SE network application
- Implement redundancy in a FactoryTalk View SE Network Application
- Use remote desktop connection and terminal services to view remote FactoryTalk View SE clients

Who Should Attend?

Individuals who need to move a distributed FactoryTalk View SE application from an engineering environment to the plant floor

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Familiarity with Windows 2003 Server and Windows networking concepts
- Completion of the *FactoryTalk View SE Programming* course (CCV207), or
- Previous experience working with FactoryTalk View SE software or similar HMI/SCADA (Supervisory Control and Data Acquisition) products

Microsoft® VBA Configuration with FactoryTalk View SE Applications

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

VBAFTVSE

4 Days CEUs 2.8

Course Purpose

In this course, students will learn to develop and implement Visual Basic for Applications (VBA) procedures or subroutines within a FactoryTalk View SE project. The course covers VBA concepts, an overview of the VBA language, FactoryTalk View SE software's object model and the creation, modification, and execution of VBA procedures from within FactoryTalk View SE software. Students will also learn the fundamentals of Microsoft Excel, Word, and Access object models. Interacting with these object models from within your FactoryTalk View SE VBA procedures will allow you to create applications that perform such tasks as creating and printing Word documents or Excel spreadsheets with charts, and reading and writing to Access database files.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Configure VBA within an FactoryTalk View SE project
- Configure UserForms and events in FactoryTalk View SE VBA
- Debug tools and error handling in VBA
- Triggering a command on a client from an HMI server
- Access the FactoryTalk View SE object model from an external automation controller
- Control Microsoft Excel, Word, and Access with VBA
- Configure OPC automation with VBA
- Configure trend object

Who Should Attend?

Individuals who wish to implement VBA procedures within their FactoryTalk View SE projects to meet application requirements

Difficulty Level Beginner

Prerequisites

- Familiarity with the Windows XP user interface and Rockwell Software's FactoryTalk View SE software
- Familiarity with processors

RSView32 Project Development

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCV201

4.5 Days CEUs 3.2

Course Purpose

This course teaches students the skills needed to create an RSView32 human-machine interface (HMI) automation project used to control and monitor an operation. Students will learn how RSView32 software provides interoperability with other Rockwell Software products, Microsoft products, and third-party offerings. Students will create a basic HMI/MMI that incorporates the vast array of powerful tools that RSView32 software offers.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Create RSView32 projects, derived tag & event files, ActiveX objects, and graphic displays
- Configure direct driver communications, OPC/DDE communications, trends & pens, and security
- Create and monitor tags, alarms, and activities
- Create and run parameter files, macros, and symbols
- Configure and run data log models
- Add animation to graphic displays
- Create RAD server, client connections, key definition control, and OLE objects
- Enter and run VBA code

This course is intended for programmers. Some topics may be similar to topics covered in course CCP200.

Who Should Attend?

Individuals who:

- Need to create an RSView32 project to control
- Need to monitor an operation using RSView32 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *PLC-5/SLC 500 and RSLogix Fundamentals* course (CCP122) or the *RSLogix 5000 Level 1: ControlLogix System Fundamentals* course (CCP146) or equivalent experience.

Job Aids Included	Catalog #
RSView32 Procedures Guide	ABT-9301-TSJ50

PanelView™ 300/550/600/900/1000/1400 and PanelBuilder™32 Application Development

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP196

2 Days CEUs 1.4

Course Purpose

This course prepares students to successfully design and configure a control panel application for a PanelView standard terminal that is used to control and monitor an operation. Students will first use PanelBuilder 32 software to practice the tasks associated with creating the operator interface screens, then they will demonstrate proper operation of the screens by interacting with the terminal and the processor.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Prepare a standard PanelView terminal for operation
- Connect communications cables
- Create an application, a tag database, and background text
- Define network communication parameters
- Download an application
- Create control objects and displays
- Create messages and reports
- Add bitmap graphic images
- Troubleshoot a PanelView standard terminal and a PanelBuilder32 application

Job Aids Included	Catalog #
PanelView 300/550/600/900/1000/1400 and PanelBuilder32 Procedures Guide	ABT-2711-TSJ50

Who Should Attend?

Individuals who:

- Need to diagnose and correct application and/or terminal problems
- Need to create a PanelBuilder32 application
- Need to control and monitor an operation using a PanelView standard terminal

Difficulty Level Beginner

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Experience creating ladder logic using RSLogix 500 software
- Completion of the *PLC-5/SLC 500 and RSLogix Fundamentals* course (CCP122) or equivalent experience

Visualization

Web-Based and Computer-Based Training

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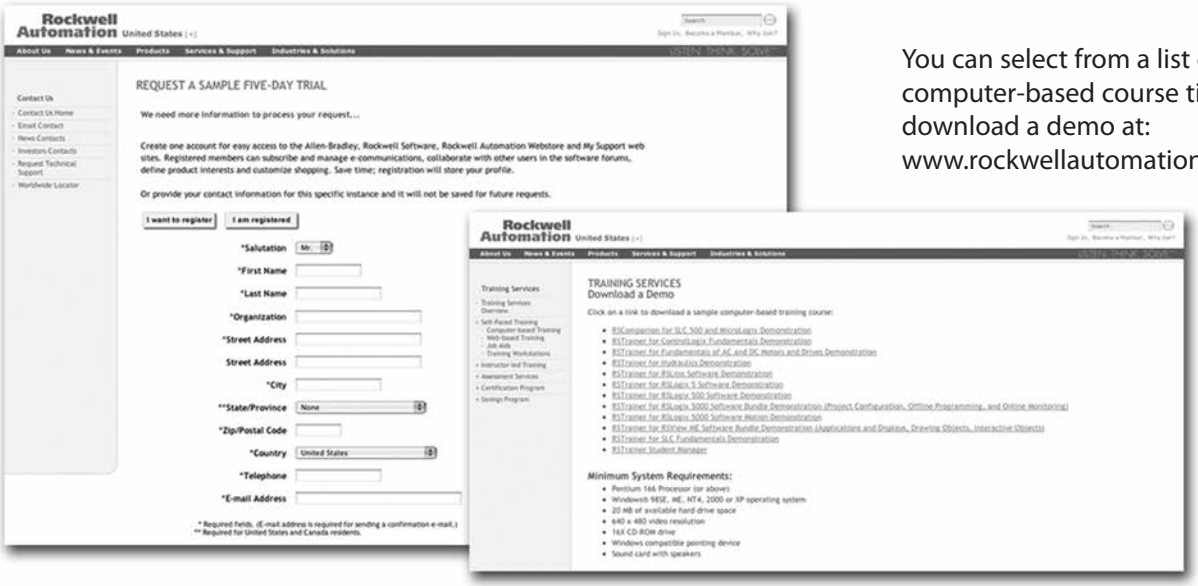

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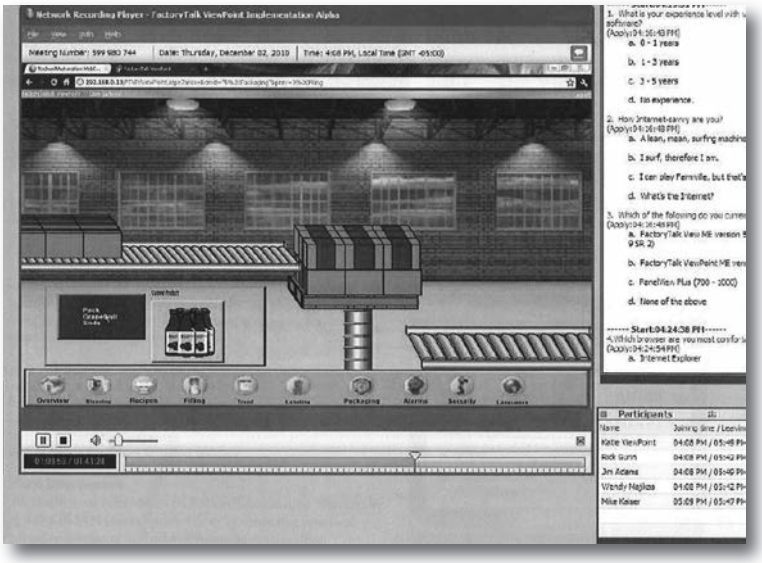


Rockwell Automation offers interactive Virtual Classroom training, which are short, one or two-hour training sessions conducted by a knowledgeable instructor via the Internet.

What is it?

- Travel-free alternative to traditional classroom courses
- "Blended" learning mode, combining instructor presentations, demonstrations, exercises, check knowledge, and white board interactivity
- Dynamic question and answer sessions
- Desktop sharing between instructor and student
- Global solution for customer participants worldwide
- Modular – Allowing the student to concentrate on the content they need

What it is not?

- Not a conference call, webinar, or webcast
- Not a second-rate substitute for traditional classroom training
- Not a click-through PowerPoint® presentation

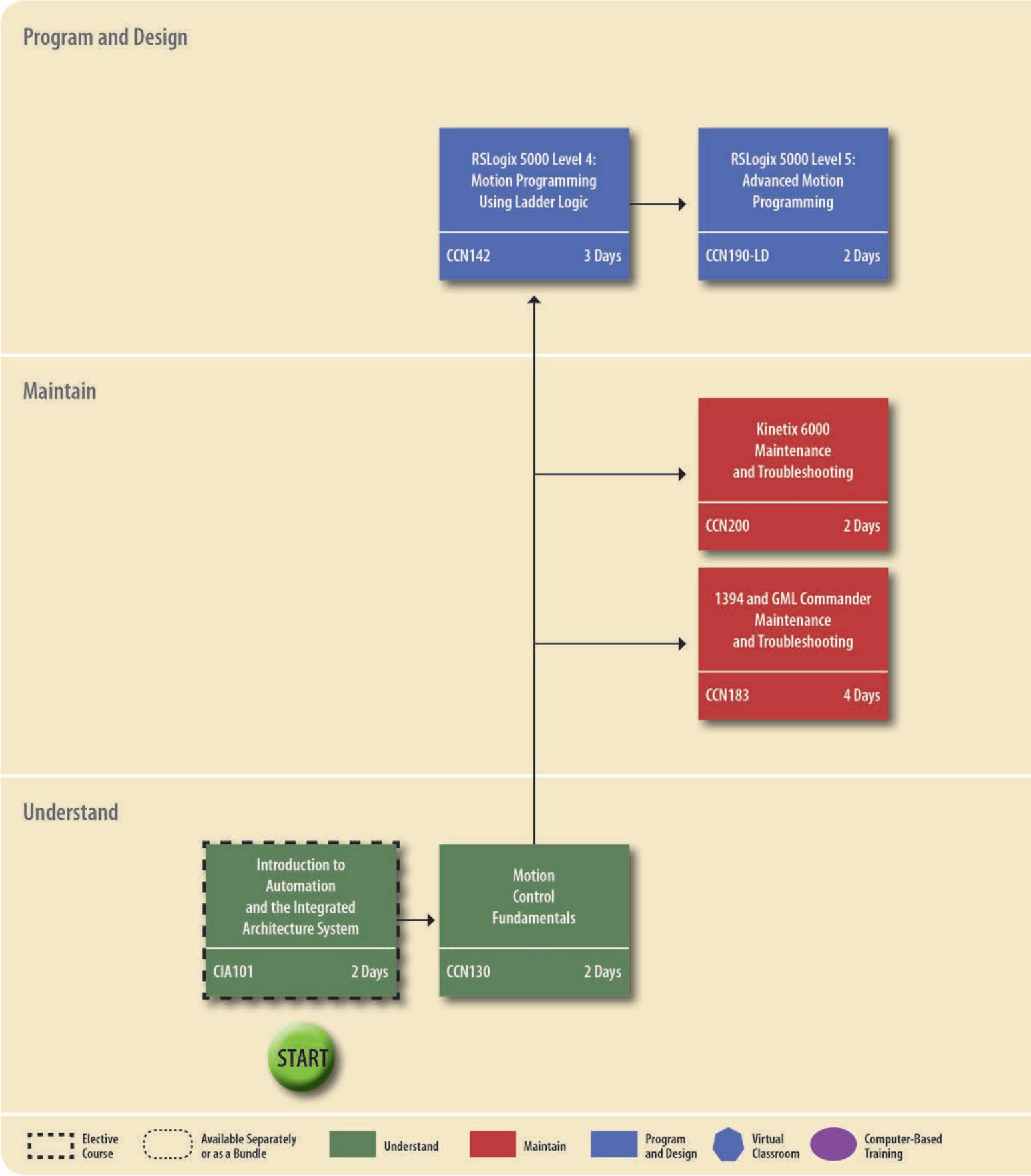
Course Number for enrollment	Course Name	Description
VC-LLB	Ladder Logic Basics	Session 1: 90 min. Session 2: 90 min. Session 3: 90 min. Session 4: 90 min. Session 5: 90 min. Bundled with a CompactLogix Starter Workstation
VC-SFT106	Arc Flash Awareness	Session 1: 90 min. Session 2: 90 min. Session 3: 90 min. Session 4: 90 min.
VC-MFSISO-01	Machine Functional Safety & ISO 13849 System Design: Risk Assessment	Session 1: 120 min.
VC-FTVIEW-01	FactoryTalk® ViewPoint Implementation: FactoryTalk View ME Integration	Session 1: 90 min.
VC-CCN300	Integrated Motion on EtherNet/IP: Configuration & Commissioning	Session 1: 120 min. Session 2: 90 min.

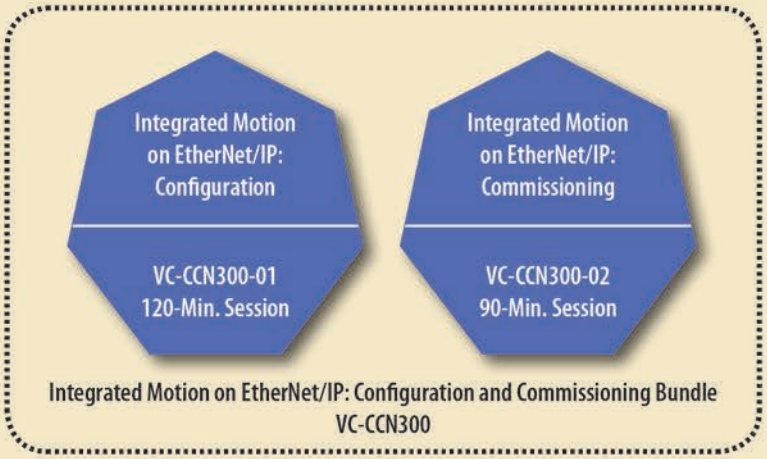
For more information

Contact your local authorized Allen-Bradley distributor, Rockwell Automation sales office, or call 440-646-3434 (option 4).

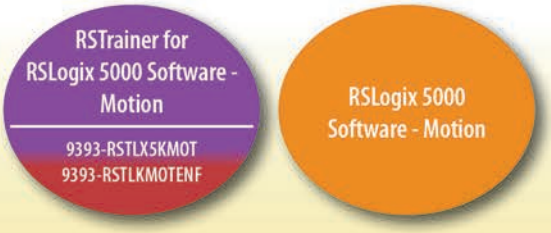
Motion Control

Motion Control Curriculum Map





Related e-Learning Products



Introduction to Automation and Integrated Architecture™ System

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CIA101

2 Days CEUs 1.4

Course Purpose

This course will assist students in developing and building a solid foundation of Integrated Architecture and automation system knowledge. Students will learn about and interact with a variety of automation hardware. Students will also have an opportunity to use Rockwell Automation software to perform basic system configuration tasks. While performing these tasks, students will gain an understanding of how controllers, drives, motors, networks, and HMI products function together within Integrated Architecture.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify components of an integrated system
- Establish communications in an integrated system
- Program a basic RSLogix 5000 project for an integrated system
- Program with tag-based addressing in an integrated system
- Identify programming languages in an integrated system
- Understand Logix5000™ multi-discipline control
- Understand NetLinx-enabled networks
- Understand the visualization development environment of an integrated system
- Understand HMI direct tag referencing in an integrated system

Who Should Attend?

Individuals who:

- Have little or no working experience with automation systems
- Are interested in gaining a broad understanding of automation and the Integrated Architecture System

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft® Windows® environment

Motion Control Fundamentals

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCN130

2 Days CEUs 1.4

Course Purpose

This course provides students with an overview of motion control concepts, terminology, functionality, and applications. In addition, students will also learn how motion control applications function using the concepts and principles discussed in each lesson. An integrated practice at the end of the course provides students with an opportunity to test their complete motion control skill set. This course allows students to establish the essential foundation needed to attend other courses in the Motion Control curriculum.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify motion control system components and functions
- Apply basic motion control concepts
- Identify the components of a digital servo motion controller
- Identify the functionality of AC and DC servo motors and servo drives
- Identify the functionality of feedback devices and software servo loop
- Apply motion profiles
- Apply electronic gearing and camming profiles

Who Should Attend?

Individuals who:

- Need to learn basic motion control concepts for their job
- Need a prerequisite for attending other motion control courses

Difficulty Level Beginner

Prerequisites

There are no prerequisites for this course; however, a background in basic electricity, electronics, controllers operation, and computer concepts is helpful.

Job Aids Included	**Catalog #**
Motion Control Glossary	ABT-M100-TSG10

1394 and GML™ Commander Maintenance and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCN183

4 Days CEUs 2.8

Course Purpose

This course is intended to provide experienced plant maintenance personnel with the skills required to return a malfunctioning 1394 GMC system to productive service in the shortest time possible. Students will learn how to follow a deductive, reliable, and efficient diagnostic process to correct and clear hardware fault conditions on a 1394 GMC system. This course also provides students with the necessary skills required to maintain communication interfaces between a 1394 GMC system and other devices, including remote I/O, AxisLink, and DH-485 communications.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Configure serial communications
- Download and run a GML Commander diagram
- Monitor a system
- Identify and maintain system hardware
- Identify global faults
- Troubleshoot the system and axis module
- Troubleshoot a 1326 motor
- Troubleshoot EMI
- Troubleshoot remote I/O, AxisLink, runtime faults, and DH-485 communications faults

Who Should Attend?

Individuals who need to maintain and troubleshoot a 1394 GMC system with a multi-axis motion application

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *Motion Control Fundamentals* course (CCN130) or equivalent experience
- Completion of the *PLC-5/SLC 500 and RSLogix Fundamentals* course (CCP122) or equivalent experience
- Experience with drives, feedback devices, open/closed-loop systems, and position, velocity, and feedback loops

Job Aids Included	Catalog #
GML Commander and 1394 Procedures Guide	ABT-4100-TSJ51
1394 and GML Commander Troubleshooting Guide	ABT-1394-TSJ21

Kinetix® 6000 Maintenance and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCN200

2 Days CEUs 1.4

Course Purpose

This course provides students with skills required to diagnose common problems on a Kinetix 6000 system. Students will practice operating and troubleshooting the system through hands-on exercises using RSLogix 5000 software. Students will also learn how to maintain and troubleshoot a multi-axis motion control system. Students will practice identifying faults related to hardware and software by employing methods such as fault code tables, system LEDs, and other status indicators. Upon completion of this course, students will be able to apply maintenance and troubleshooting techniques to diagnose and correct common problems on a Kinetix 6000 system.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Locate Kinetix 6000 system components
- Check Kinetix 6000 connections
- Interpret Kinetix 6000 indicators
- Analyze fault codes in a Kinetix 6000 system
- Interpret motion state and move instructions in an RSLogix 5000 project
- Test and tune axes in an RSLogix 5000 project
- Replace a Kinetix 6000 drive

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Motion Control Procedures Guide	ABT-1756-TSJ52
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

Who Should Attend?

Individuals who need to maintain and troubleshoot Kinetix 6000 motion control systems

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *Motion Control Fundamentals* course (CCN130) or equivalent experience with drives, feedback devices, and velocity and position loop systems
- Completion of the *RSLogix 5000 Level 1: ControlLogix* System *Fundamentals* course (CCP146) or equivalent experience with the ControlLogix platform and basic ladder logic

RSLogix 5000 Level 4: Motion Programming Using Ladder Logic

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCN142

3 Days CEUs 2.1

Course Purpose

This course provides students with the skills to configure and program Logix5000 applications specifically for integrated motion control functionality using ladder logic, including both SERCOS and analog motion control technologies. Students will learn how to apply the Logix5000 architecture to a multi-axis motion control system while developing programming skills that incorporate other components in a Logix5000 system, such as adding system modules, sharing tasks between multiple controllers, programming ladder logic, and using digital I/O.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Start a Logix5000 motion control application
- Add hardware
- Test and tune axes
- Program a basic motion routine
- Program a fault routine
- Program an electronic gearing routine
- Program an electronic camming routine
- Program a virtual axis

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Motion Procedures Guide	ABT-1756-TSJ52
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

Who Should Attend?

Individuals who:

- Need to configure and program Logix5000 motion control systems
- Are already familiar with Logix5000 systems and general motion control

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *Motion Control Fundamentals* course (CCN130) or equivalent experience with drives, feedback devices, and velocity and position loop systems
- Completion of the *RSLogix 5000 Level 3: Project Development* course (CCP143) or equivalent experience
- Experience with entering and debugging ladder logic

RSLogix™ 5000 Level 5: Advanced Motion Programming

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCN190-LD

2 Days CEUs 1.4

Course Purpose

This course is intended to provide students with the skills to configure and program Logix5000 applications specifically for integrated motion control functionality using ladder logic, including SERCOS motion control technology. Students will learn how to apply advanced programming skills including manual tuning, advanced camming techniques, coordinated motion, and add-on instructions for motion applications.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Manually tune axes
- Program event driven tasks
- Program output cam instructions
- Calculate a cam profile
- Program coordinated move and add-on instructions
- Organize a motion control project using the power programming state model
- Programming coordinated move transform instructions in a pick and place application

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Motion Control Procedures Guide	ABT-1756-TSJ52
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

Who Should Attend?

Individuals who:

- Need to configure and program advanced Logix5000 motion control systems
- Are already familiar with Logix5000 systems and general motion control

Difficulty Level Advanced

Prerequisites

- Completion of the *RSLogix 5000 Level 3: Project Development* course (CCP143) or equivalent knowledge or experience with basic ladder logic programming
- Completion of the *RSLogix 5000 Level 4: Motion Programming Using Ladder Logic* course (CCN142) or equivalent experience
- Ability to perform basic Microsoft Windows tasks

Integrated Motion on EtherNet/IP: Configuration

Virtual Classroom

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

VC-CCN300-01

120 Minutes CEUs 0.2

Course Purpose
This course will teach students how to choose topology and components, configure controllers and axes, and add drives to their configuration.

Course Objectives
After completing this course, students will be able to perform the following tasks:
- Choose topology and components
- Configure a controller for the network
- Add drives
- Configure axes

Who Should Attend?
Individuals who design and develop motion control applications and who will be working with Integrated Motion on EtherNet/IP networks

Difficulty Level Intermediate

Prerequisites
Experience developing motion control applications and working with RSLogix 5000 software

Integrated Motion on EtherNet/IP: Commissioning

Virtual Classroom

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

VC-CCN300-02

90 Minutes CEUs 0.15

Course Purpose
This course will show students how to start up the network, test axes with motion direct commands, run hookup tests, and autotune axes.

Course Objectives
After completing this course, students will be able to perform the following tasks:
- Start up the network
- Test axes with motion direct commands
- Run hookup tests
- Autotune axes

Who Should Attend?
Individuals who design and develop motion control applications and who will be working with Integrated Motion on EtherNet/IP networks

Difficulty Level Intermediate

Prerequisites
Experience developing motion control applications and working with RSLogix 5000 software

Rockwell Automation

RSTrainer® CD-ROM Courses

Computer-Based Training

Benefits

- Eliminate travel costs
- Lower overall training costs
- Better knowledge retention
- Improved performance
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Training is offered for the following products:

- RSLogix™ 5, RSLogix™ 500, and RSLogix™ 5000
- SLC 500
- RSLinx®
- Hydraulics
- ControlLogix®
- FactoryTalk® View Machine Edition
- EtherNet/IP

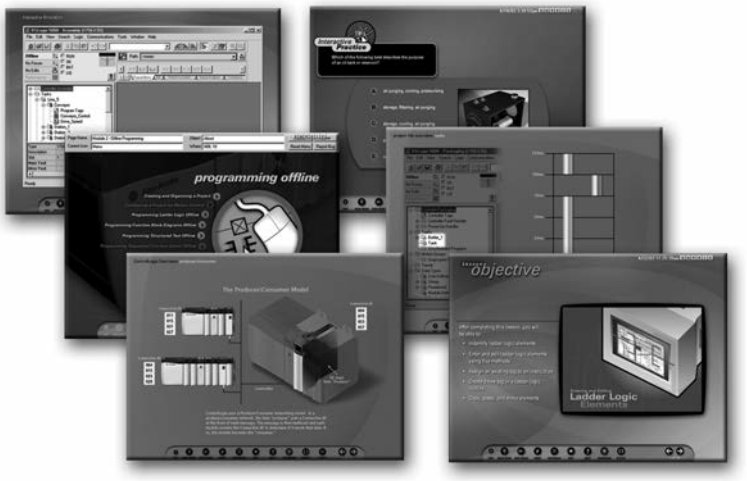
Plus

- RSCompanion for SLC™ 500 and MicroLogix™ users

Minimum System Requirements RSTrainer on a PC:

- Pentium III-processor (or better)
- Windows 98SE, NT4, 2000, XP, Vista, or 7 operating system
- 20 MB of available hard drive space
- 800 x 600 video resolution
- CD-ROM drive
- Windows compatible pointing device
- Sound card with speakers

Note:
RSTrainer is not operable on a MAC system



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Two purchasing options are available with RSTrainer computer-based training:

Single-User Option: RSTrainer offers a single-user license and a single software activation. This computer-based training product is designed so that one person can use the program on one computer at one time. With this option, the RSTrainer software can be installed and activated on only one computer and not on a network.

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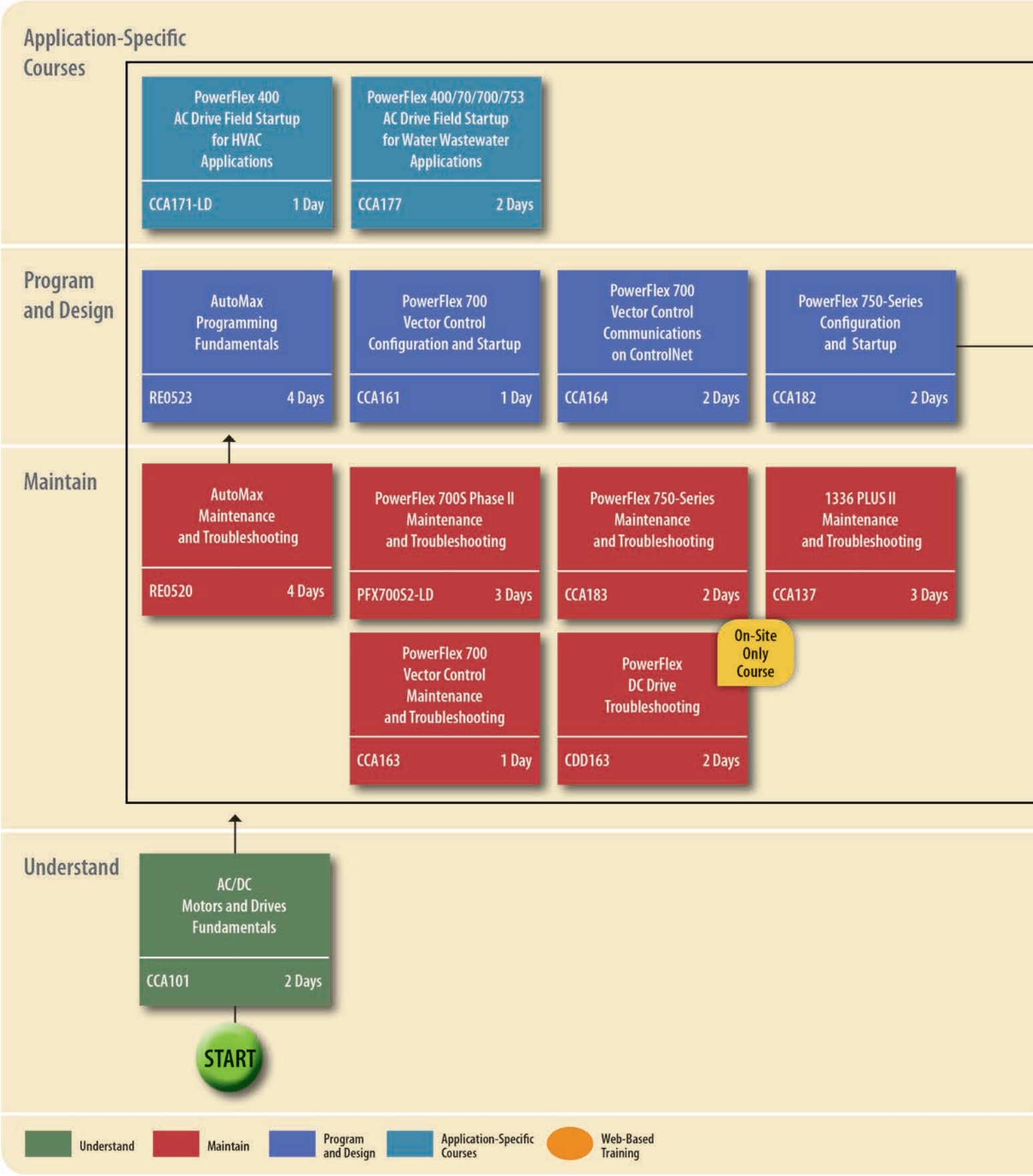
Drives

Drives Curriculum Map



PowerFlex 750-Series Configuration for an Integrated Architecture System
CCA184 — 1 Day

PowerFlex 700 Vector Control Communications on DeviceNet
CCA162 — 1 Day

PowerFlex DC Drive Configuration and Startup
CDD161 — 2 Days
On-Site Only Course

IntelliCENTER and DeviceNet Configuration
CCI106-LD — 2 Days

ArmorStart Distributed Motor Controller Maintenance and Troubleshooting
CCA190 — 1 Day

Related e-Learning Product

Fundamentals of AC/DC Motors and Drives

AC/DC Motors and Drives Fundamentals

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCA101

2 Days CEUs 1.4

Course Purpose

This skill-building course provides students with a basic understanding of AC and DC motor and drive concepts and terminology. At the completion of this course, students will have the necessary fundamental knowledge and skills required to attend other Rockwell Automation AC and DC drives courses. Students will gain the hands-on skills required to build a miniature DC motor and investigate how a variable-speed drive controls the speed and direction of an attached motor. Students will also become familiar with the drive Human Interface Module (HIM), which allows programmers, maintainers, and troubleshooters access to information stored within the drive.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Recognize AC/DC motor drive hardware and operation
- Select a replacement motor
- Recognize line protection and filtering device hardware and functions
- Prevent electrostatic damage
- Recognize AC/DC motor braking methods
- Test a drive using electrical measuring tools
- Preform pre-power and power-on checks
- Monitor and control a drive using the HIM
- Select a drive for basic applications

Who Should Attend?

Individuals who need to gain a fundamental understanding of motor and drive concepts before they learn to program, maintain, and troubleshoot AC and DC drives

Difficulty Level Beginner

Prerequisites

- Experience operating a computer within a Microsoft® Windows® environment
- General knowledge of electricity, electronics, and industrial safety
- Familiarity with electrical measuring tools is helpful but not required

Job Aids Included	Catalog #
AC and DC Motor and Drive Glossary	ABT-D100-TSG10

PowerFlex 700 Vector Control Maintenance and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCA163

1 Day CEUs 0.7

Course Purpose

This skill-building course introduces concepts and techniques that will assist students in successfully maintaining and troubleshooting a PowerFlex 700 vector control drive. Students will learn how to recognize PowerFlex 700 drive hardware and properly wire the drive. Students will also learn to diagnose specific load-related, environmental, and equipment faults. Throughout the course, students will use the LCD HIM, DriveExplorer™, and DriveExecutive™ software to clear faults and alarms.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Replace and rewire PowerFlex 700 drive hardware
- Configure drive parameters using LCD HIM, DriveExplorer and DriveExecutive software
- Upload and download drive data
- Troubleshoot and clear PowerFlex 700 alarms
- Clear drive faults
- Troubleshoot PowerFlex 700 drive, load, and environmental faults
- Troubleshoot PowerFlex 700 drive equipment malfunctions

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Working knowledge of electricity and safety practices
- Completion of the *Fundamentals of AC and DC Motors and Drives* web-based training (ePass/WBT1PACK), or equivalent experience

Who Should Attend?

Individuals responsible for maintaining and troubleshooting PowerFlex 700 vector control drives

Difficulty Level Intermediate

Job Aids Included	Catalog #
PowerFlex 700 Standard and Vector Control Troubleshooting Guide	ABT-20B-TSJ20
PowerFlex 700 Standard and Vector Control Procedures Guide	ABT-20B-TSJ50
PowerFlex 700 Standard and Vector Control Quick Reference Guide	ABT-20AB-TQR90
PowerFlex 700 Standard and Vector Control Documentation Reference Guide CD	ABT-20B-DRG70

This course is intended for maintainers. Some topics may be similar to topics covered in course CCA161.

PowerFlex DC Drive Troubleshooting (available on-site only)

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CDD163

2 Days CEUs 1.4

Course Purpose

This skill-building course is delivered at your facility and requires 230V, 3-phase power to operate the workstations. This course introduces concepts and techniques that will assist students in successfully troubleshooting a PowerFlex DC drive. Students will learn how to recognize PowerFlex DC drive hardware and properly rewire the drive. Students will also learn to diagnose and correct specific faults. Throughout this course, students will have the chance to use a variety of troubleshooting tools, including: LCD HIM, DriveExplorer software, and DriveExecutive software. After each demonstration, students will be given exercises that offer extensive hands-on practice using the PowerFlex DC drive. This course can be taken as a stand-alone course, or it can be taken in conjunction with other courses in the PowerFlex AC and DC drives curriculum for further skills development.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify PowerFlex DC drive hardware
- Replace and Rewire PowerFlex DC hardware
- Locate and Modify PowerFlex DC drive parameters using the A3 LCD HIM, the A6 LCD HIM , and drive software
- Clear PowerFlex DC drive alarms and faults
- Troubleshoot PowerFlex DC load/environmental faults and drive equipment malfunctions
- Troubleshoot a PowerFlex DC drive

Who Should Attend?

Individuals responsible for troubleshooting PowerFlex DC drives

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Knowledge of basic DC motor and drive fundamentals through the completion of the *AC/DC Motors and Drives Fundamentals* course (CCA101), *Fundamentals of AC and DC Motors and Drives* web-based training (ePass/WBT1PACK), or equivalent experience.

Job Aids Included	Catalog #
PowerFlex DC Drives Documentation Reference Guide CD	ABT-20P-DRG70

AutoMax Maintenance and Troubleshooting

RE0520

4 Days

Course Purpose

This course is designed to provide students with a general understanding of AutoMax hardware and to acquire the necessary skills to analyze the AutoMax processors for information needed to troubleshoot the system. Students will also be provided an opportunity to monitor and load an AutoMax processor and to locate the necessary points for voltage measurements. After completing this course, students will understand AutoMax hardware in order to perform basic troubleshooting.

Course Objectives

After completing this course, students will understand the following topics:

- AutoMax concepts
- Hardware discussion
- AutoMax executive
- Configuration
- PC task
- Basic language
- Control block language

Who Should Attend?

Individuals who are responsible for the installation, maintenance, and repair of AutoMax systems

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Familiarity with test equipment and drive systems

PowerFlex® 700S Phase II Maintenance and Troubleshooting

PFX700S2-LD

3 Days

Course Purpose

This skill-building course introduces concepts and techniques that will assist students in successfully maintaining and troubleshooting a PowerFlex 700S Phase II AC drive. Students will learn how to recognize PowerFlex 700S Phase II drive hardware and properly wire the drive. Students will also learn to diagnose specific load-related, environmental, and equipment faults. Throughout the course, students will use the LCD HIM, DriveExplorer software, and DriveExecutive software to clear faults and alarms. After each demonstration, students will be given an application-based exercise that offers extensive hands-on practice using the PowerFlex 700S drive.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Understand PowerFlex 700S Phase II hardware
- Configure drive parameters
- Configure motor control options
- Select speed feedback options
- Configure a gear-in application
- Configure Synchlink communications
- Troubleshoot a PowerFlex 700S Phase II drive
- Install and configure a ControlNet communications adapter
- Install and configure an EtherNet communications adapter

Who Should Attend?

Individuals responsible for starting up, configuring, maintaining, and troubleshooting PowerFlex 700S Phase II drives

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft® Windows® environment
- Completion of the *AC/DC Motors and Drives Fundamentals* course (CCA101) or equivalent experience

Job Aids Included	Catalog #
PowerFlex 700S Phase II Documentation Reference Guide CD	ABT-20D-DRG71

PowerFlex 750-Series Maintenance and Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCA183

2 Days CEUs 1.4

Course Purpose

This skill-building course introduces concepts and techniques that will assist students in successfully maintaining and troubleshooting a PowerFlex 750-Series (PowerFlex 753 or PowerFlex 755) drive. Students will learn how to recognize PowerFlex 750-Series drive hardware and properly wire the drive. Students will also learn to diagnose specific faults. Throughout the course, students will have the chance to use a variety of maintenance and troubleshooting tools, including the A6 LCD HIM, DriveExplorer software, and DriveExecutive software. After each demonstration, students will be given exercises that offer extensive hands-on practice using a PowerFlex 753 or PowerFlex 755 drive.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Locate PowerFlex 750-Series drive hardware
- Locate and modify PowerFlex 750-Series drive data using the A6 HIM and drive software
- Clear PowerFlex 750-Series drive alarms and faults
- Perform predictive maintenance using PowerFlex 750-Series parameters
- Troubleshoot PowerFlex 750-Series load/environmental faults and equipment malfunctions

This course is intended for maintainers. Some topics may be similar to topics covered in course CCA182.

Who Should Attend?

Individuals responsible for maintaining and troubleshooting PowerFlex 750-Series drives

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Working knowledge of electricity and safety practices
- Completion of the *AC/DC Motors and Drives Fundamentals* course (CCA101), *Fundamentals of AC and DC Motors and Drives* web-based training (ePass/WBT1PACK), or equivalent experience

Job Aids Included	Catalog #
PowerFlex 750-Series AC Drives Documentation Reference Guide CD	ABT-20G-DRG70

1336 PLUS II Maintenance and Troubleshooting

International Association for Continuing Education and Training

CCA137

3 Days CEUs 2.1

Course Purpose

This course prepares students to re-install 1336 PLUS II drive hardware components, make changes to the setup, and troubleshoot drive malfunctions. Students will troubleshoot and repair a 1336 PLUS II drive, learning how to help decrease the downtime of equipment. Students will have the opportunity to maximize 1336 PLUS II drive investments by taking advantage of the vast networking options and learning how to configure a 1336 PLUS II drive to communicate on various networks.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Prevent electrostatic damage to drive components
- Replace and wire drive hardware
- Test a drive using electrical measuring tools
- Perform drive pre-power and power-on checks
- Modify drive parameters using the Human Interface Module (HIM)
- Locate, monitor, and modify drive parameters using DriveTools and DriveExplorer software
- Startup, troubleshoot, and repair a drive
- Configure communications
- Identify and monitor drive malfunctions

Who Should Attend?

Individuals who need to replace, startup, maintain, and troubleshoot a 1336 PLUS II drive

Difficulty Level Intermediate

Job Aids Included	Catalog #
DriveTools32 Procedures Guide	ABT-D500-TSJ50
DriveExplorer Procedures Guide	ABT-D500-TSJ51
1336 PLUS II Troubleshooting Guide	ABT-1336F-TSJ20
1336 PLUS and PLUS II Quick Reference Guide	ABT-1336SF-TQR90
1336 PLUS and PLUS II Documentation Reference Guide CD	ABT-1336SF-DRG70

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- General knowledge of electrical principles, circuits, and safety practices
- Experience using electrical measuring tools (e.g., multimeter, megger, oscilloscope, etc.)
- Completion of the *AC/DC Motors and Drives Fundamentals* course (CCA101), *Fundamentals of AC and DC Motors and Drives* web-based training course (ePass/WBT1PACK), or equivalent experience

ArmorStart® Distributed Motor Controller Maintenance and Troubleshooting

International Association for Continuing Education and Training

CCA190

1 Day CEUs 0.7

Course Purpose

This course introduces techniques and instructions that will assist students in successfully maintaining and troubleshooting an ArmorStart distributed motor controller for communications on an existing DeviceNet network. Throughout the course, the instructor will demonstrate how to use RSNetWorx for DeviceNet software to perform tasks such as browsing the network, commissioning the ArmorStart node, and configuring parameters. Students will also gain experience commissioning the node and configuring parameters using the 193-DNCT HIM (Human Interface Module). After each demonstration, students will be given an application-based exercise that offers extensive hands-on practice using the ArmorStart distributed motor controller, RSNetWorx for DeviceNet software, and the 193-DNCT HIM.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify ArmorStart distributed motor controller components
- Connect to the ArmorStart distributed motor controller
- Edit and monitor ArmorStart parameters
- Map ArmorStart distributed motor controller inputs and outputs
- Edit and monitor ArmorStart parameters using the 193-DNCT HIM
- Troubleshoot the ArmorStart distributed motor controller

Who Should Attend?

Individuals who need to maintain and troubleshoot an ArmorStart distributed motor controller for communications on a DeviceNet network

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Working knowledge of electricity and safety practices

Job Aids Included	Catalog #
DeviceNet and RSNetWorx Procedures Guide	ABT-N100-TSJ50

AutoMax Programming Fundamentals

RE0523

4 Days

Course Purpose

This course is designed to present students with the elementary details of the AutoMax programming languages. Students will be provided an opportunity to become oriented with and use both the online and offline AutoMax Executive screens. After completing this course, students will be able to use the AutoMax Executive Program, understand the differences in AutoMax languages, and use a variety of AutoMax programming features.

Course Objectives

After completing this course, students will understand the following topics:

- Hardware overview
- Tasking
- AutoMax variables
- Configuration
- PC tasks
- Control block
- Reliance basics
- Network

Who Should Attend?

Individuals who are responsible for modifying and/or adding functionality to their AutoMax system

Difficulty Level Beginner

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Familiarity with drive systems, AutoMax hardware, and AutoMax Executive
- Completion of the *AutoMax Maintenance and Troubleshooting* (RE0520) course

PowerFlex 700 Vector Control Configuration and Startup

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCA161

1 Day CEUs 0.7

Course Purpose

This skill-building course introduces techniques and instructions that will assist students in successfully configuring and starting up a PowerFlex 700 vector control drive. Throughout the course, the instructor will demonstrate how to configure PowerFlex 700 drive parameters. The instructor will also demonstrate how to install and commission remote I/O, DeviceNet, EtherNet/IP, and ControlNet communications adapters. Then, students will practice these tasks during hands-on exercises using the LCD HIM, DriveExplorer software, and DriveExecutive software. This course is designed as a stand-alone course, or it can be taken in conjunction with other PowerFlex 700 courses for further skill development.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Configure drive parameters using DriveExplorer and DriveExecutive software
- Configure drive parameters using an LCD HIM
- Startup a drive, upload and download drive data
- Control drive operation
- Install and configure a EtherNet/IP communications adapter
- *Optional: Install and configure a DeviceNet, ControlNet, and remote I/O communications adapter*

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Working knowledge of electricity and safety practices
- Completion of the *AC/DC Motor and Drive Fundamentals* course (CCA101), *Fundamentals of AC and DC Motors and Drives* web-based training course (ePass/WBT1PACK), or equivalent experience

Who Should Attend?

Individuals responsible for configuring parameters and starting up PowerFlex 700 vector control drives

Difficulty Level Intermediate

Job Aids Included	Catalog #
PowerFlex 700 Standard and Vector Control Procedures Guide	ABT-20B-TSJ50
PowerFlex 700 Standard and Vector Control Quick Reference Guide	ABT-20AB-TQR90
PowerFlex 700 Standard and Vector Control Documentation Reference Guide CD	ABT-20B-DRG70

This course is intended for programmers. Some topics may be similar to topics covered in course CCA163.

PowerFlex 700 Vector Control Communications on ControlNet

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCA164

2 Days CEUs 1.4

Course Purpose

This course introduces students to techniques and instructions that will assist them in starting up a PowerFlex 700 AC drive and commissioning it on a ControlNet network. Students will learn how to configure PowerFlex 700 drive parameters and install and commission a ControlNet communications adapter. Students will also learn to configure a ControlNet network and create network connections for Logix5000 controllers.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Configure drive parameters using an LCD HIM
- Configure drive parameters using DriveExplorer and DriveExecutive software
- Upload and download PowerFlex 700 drive data
- Startup a PowerFlex 700 drive
- Install and configure a PowerFlex 700 drive ControlNet communications adapter
- Configure an offline ControlNet network
- Go online to a ControlNet network
- Enter scheduled ControlNet I/O data connections for Logix5000 controllers
- Enter ControlNet messages for Logix5000 controllers
- Control PowerFlex 700 drive operation

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Working knowledge of electricity and safety practices
- Completion of the *AC/DC Motors and Drives Fundamentals* course (CCA101), *Fundamentals of AC and DC Motors and Drives* web-based training course (ePass/WBT1PACK), or equivalent experience

Who Should Attend?

Individuals responsible for configuring parameters and starting up PowerFlex 700 drives

Difficulty Level Intermediate

Job Aids Included	Catalog #
PowerFlex 700 Standard and Vector Control Quick Reference Guide	ABT-20AB-TQR90
PowerFlex 700 Standard and Vector Control Procedures Guide	ABT-20B-TSJ50
PowerFlex 700 Standard and Vector Control Documentation Reference Guide CD	ABT-20B-DRG70
ControlNet and RSNetWorx Procedures Guide	ABT-N200-TSJ50

This course is intended for programmers. Some topics may be similar to topics covered in course CCP173.

PowerFlex 750-Series Configuration and Startup

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCA182

2 Days CEUs 1.4

Course Purpose

Upon completion of this course, given a wired PowerFlex 750-Series drive (PowerFlex 753 or PowerFlex 755) and AC motor, students will be able to startup the drive and configure drive parameters to meet application needs. Throughout the course, students will have the chance to use a variety of hardware and software tools, including the A6 LCD HIM, DriveExecutive software, and DriveExplorer software. After each demonstration, students will be given exercises that offer extensive hands-on practice using a PowerFlex 753 or PowerFlex 755 drive.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Verify PowerFlex 750-Series drive installation
- Locate and modify PowerFlex 750-Series drive data using the A6 HIM and drive software
- Configure EtherNet/IP communications adapter for a PowerFlex 750-Series drive
- Startup a PowerFlex 750-Series drive
- Interpret PowerFlex 750-Series control block diagrams
- Control PowerFlex 750-Series drive operation
- Create a DeviceLogix program in a PowerFlex 750-Series drive

This course is intended for programmers. Some topics may be similar to topics covered in course CCA183.

Who Should Attend?

Individuals who need to configure and startup PowerFlex 750-Series drives

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Working knowledge of electricity and safety practices
- Completion of the *AC/DC Motors and Drives Fundamentals* course (CCA101), *Fundamentals of AC and DC Motors and Drives* web-based training (ePass/WBT1PACK), or equivalent experience

Job Aids Included	Catalog #
PowerFlex 750-Series AC Drives Documentation Reference Guide CD	ABT-20G-DRG70

PowerFlex 750-Series Configuration for an Integrated Architecture System

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCA184

1 Day CEUs 0.7

Course Purpose

Upon completion of this course, given a PowerFlex 750-Series drive (PowerFlex 753 or PowerFlex 755) that has been successfully started up, students will be able to integrate their drive into a system that includes Logix5000 controllers and PanelView Plus terminals running FactoryTalk View ME software. Throughout the course, students will have the chance to use a variety of hardware and software tools, including the A6 LCD HIM, RSLogix 5000 software, and FactoryTalk View ME software. After each demonstration, students will be given exercises that offer extensive hands-on practice using a PowerFlex 753 or PowerFlex 755 drive.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Add a PowerFlex 750-Series drive to an RSLogix 5000 project
- Locate and modify PowerFlex 750-Series data using RSLogix 5000 software
- Integrate a PowerFlex 750-Series drive with a Logix5000 controller
- Add PowerFlex 750-Series faceplates to a FactoryTalk View ME application
- Operate a PowerFlex 750-Series drive in an Integrated Architecture system

Job Aids Included	Catalog #
PowerFlex 750-Series AC Drives Documentation Reference Guide CD	ABT-20G-DRG70
PowerFlex Accelerator Toolkit for Drive Systems Quick Start	N/A
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50

Who Should Attend?

Individuals who need to add PowerFlex 750-Series drives to an Integrated Architecture system

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *PowerFlex 750-Series Startup and Configuration* course (CCA182)
- Completion of one of the following methods: *RSLogix 5000 Level 1: ControlLogix System Fundamentals* course (CCP146), RSLogix 5000 software computer-based and/or web-based training or equivalent experience
- Previous experience with FactoryTalk View ME software is suggested, but not required.

PowerFlex 700 Vector Control Communications on DeviceNet

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCA162

1 Day CEUs 0.7

Course Purpose

This skill-building course introduces techniques and instructions that will assist students in successfully configuring a PowerFlex 700 vector control drive to communicate on an existing DeviceNet network. Throughout the course, the instructor will demonstrate how to use RSNetWorx for DeviceNet software to perform tasks, such as browsing the network, commissioning the PowerFlex 700 node, and configuring drive parameters. Students will also learn about scanner module configuration and input and output mapping. This course is designed as a stand-alone course or it can be taken in conjunction with other PowerFlex 700 courses for further skill development.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Connect a drive to a DeviceNet network
- Commission a node on a DeviceNet network
- Configure drive and adapter parameters using RSNetWorx for DeviceNet software
- Manage DeviceNet EDS files for the drive
- Configure a DeviceNet scanner module to communicate with a drive
- Map drive inputs and outputs on a DeviceNet network

Who Should Attend?

Individuals responsible for configuring PowerFlex 700 vector control drives to communicate on a DeviceNet network

Difficulty Level Intermediate

Job Aids Included	Catalog #
PowerFlex 700 Standard and Vector Control Procedures Guide	ABT-20B-TSJ50
DeviceNet and RSNetWorx Procedures Guide	ABT-N100-TSJ50
PowerFlex 700 Standard and Vector Control Documentation Reference Guide CD	ABT-20B-DRG70

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Working knowledge of electricity and safety practices
- Completion of the *AC/DC Motors and Drives Fundamentals* course (CCA101), *Fundamentals of AC and DC Motors and Drives* web-based training course (ePass/WBT1PACK), or equivalent experience

PowerFlex DC Drive Configuration and Startup (available on-site only)

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CDD161

2 Days CEUs 1.4

Course Purpose

This skill-building course is delivered at your facility and requires 230V, 3-phase power to operate the workstations. This course introduces concepts and techniques that will assist students in successfully starting up and configuring a PowerFlex DC drive. Students will learn how to recognize PowerFlex DC drive hardware and verify proper drive wiring. Students will also learn to perform startup tasks. Throughout this course, students will have the chance to use a variety of startup and configuration tools, including: LCD HIM, DriveExplorer software, and DriveExecutive software. After each demonstration, students will be given exercises that offer extensive hands-on practice using the PowerFlex DC drive. This course can be taken as a stand-alone course, or it can be taken in conjunction with other courses in the PowerFlex AC and DC drives curriculum for further skills development.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify PowerFlex DC drive hardware
- Configure PowerFlex DC drive parameters using the A3 LCD HIM, the A6 LCD HIM, and software
- Prepare for a PowerFlex DC drive startup
- Apply power to a PowerFlex DC drive
- Tune the PowerFlex DC drive current regulator and speed regulator
- Commission a PowerFlex DC drive using drive software
- Install and Commission an EtherNet/IP adapter
- Control PowerFlex DC drive operation

Who Should Attend?

Individuals responsible for starting up and configuring PowerFlex DC drives

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Knowledge of basic DC motor and drive fundamentals through the completion of the *AC/DC Motors and Drives Fundamentals* course (CCA101), *Fundamentals of AC and DC Motors and Drives* web-based training (ePass/WBT1PACK), or equivalent experience.

Job Aids Included	Catalog #
PowerFlex DC Drives Documentation Reference Guide CD	ABT-20P-DRG70

IntelliCENTER® and DeviceNet™ Configuration

CCI106-LD

2 Days

Course Purpose

This course provides the concepts, knowledge, and tools necessary to design, specify, install, troubleshoot, and use an IntelliCENTER MCC or DeviceNet MCC. During the course, students will employ control and communication architectures by solving sample architecture problems presented in class. Students will also learn to use various software tools associated with DeviceNet MCCs, such as RSLinx and RSNetWorx for DeviceNet software in addition to MCC start-up, maintenance, and replacement. The last day focuses on network configuration, mapping of scanners, and PLC programming in a DeviceNet MCC system.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Understand DeviceNet, RSLinx, and RSNetWorx
- Understand basics of the software
- Understand advanced features of IntelliCENTER
- Search for EDS files
- Wire DeviceNet and receive the MCC
- Add MCC units and sections
- Replace a device/auto-device and node recovery options
- Configure ControlLogix for communications
- Understand DeviceNet scanner mapping
- Understand basic programming concepts

Who Should Attend?

Control engineers, electrical technicians, and system integrators who will be involved in designing, installing, and using IntelliCENTER/DeviceNet MCCs.

Difficulty Level Intermediate

Prerequisites

- Familiarity with PLC programming software

PowerFlex 400 AC Drive Field Startup for HVAC Applications

CCA171-LD

1 Day

Course Purpose

This course provides fundamental concepts of AC/DC drive and motor operation to enable effective startup of PowerFlex 400 drives within the HVAC market. This course provides students with information related to applications, proper drive selection, and sizing as well as various installation considerations. Students will learn how to recognize PowerFlex 400 drive hardware and properly program and troubleshoot the drive as part of a typical startup service. Throughout this course, students will use the LCD HIM and DriveExplorer software to program and monitor various drive parameters. After each demonstration, students will be given an application-based exercise that offers extensive hands-on practice using the PowerFlex 400 drive.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Understand basic drive and motor technology
- Relate product features to application needs
- Verify proper installation of the drive
- Effectively program the drive

Who Should Attend?

Individuals who will be conducting startup of PowerFlex 400 drives for HVAC applications

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Previous experience working with AC Drive technology

PowerFlex 400/70/700/753 AC Drive Field Startup for Water Wastewater Applications

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCA177

2 Days CEUs 1.4

Course Purpose

This skill-building course provides students with fundamental concepts of AC drive and motor operation to enable effective startup of PowerFlex 400, PowerFlex 70 EC (enhanced control), PowerFlex 700 VC (vector control), and PowerFlex 753 drives for Water Wastewater applications. The course also provides information related to applications, proper drive selection, and sizing as well as various installation considerations and troubleshooting practices. Students will learn how to recognize PowerFlex 400, 70, 700, and 753 drive hardware and properly program and troubleshoot the drive as part of a typical startup. Throughout the course, students will use the various LCD HIMs, DriveExplorer software, DriveExecutive software, and DriveObserver™ software to program and monitor various drive parameters. After each demonstration, students will be given an exercise that offers hands-on practice using PowerFlex 400, PowerFlex 700 VC, and/or PowerFlex 753 drives.

Course Objectives

After completing this course, students will understand the following topics:

- Basics of drive and motor control theory (review)
- PowerFlex 400/70/700/753 product overview

Students will also be able to perform the following tasks:

- Apply drive installation best practices
- Monitor and modify PowerFlex drive parameters using the HIM and software
- Program PowerFlex drives
- Set up a PowerFlex drive to communicate over Ethernet
- Troubleshoot a PowerFlex drive over Ethernet

Who Should Attend?

Individuals responsible for starting up PowerFlex drives in Water Wastewater applications

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *AC/DC Motors and Drives Fundamentals* course (CCA101) or *Fundamentals of AC and DC Motors and Drives* web-based training (ePass/WBT1PACK) or equivalent experience

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Attend a Rockwell Automation Fundamentals class
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To enroll in a Rockwell Automation training class, contact your local Allen-Bradley distributor, Rockwell Automation sales office or dial 440-646-3434 (option 4) and mention promotional code TAS0702.

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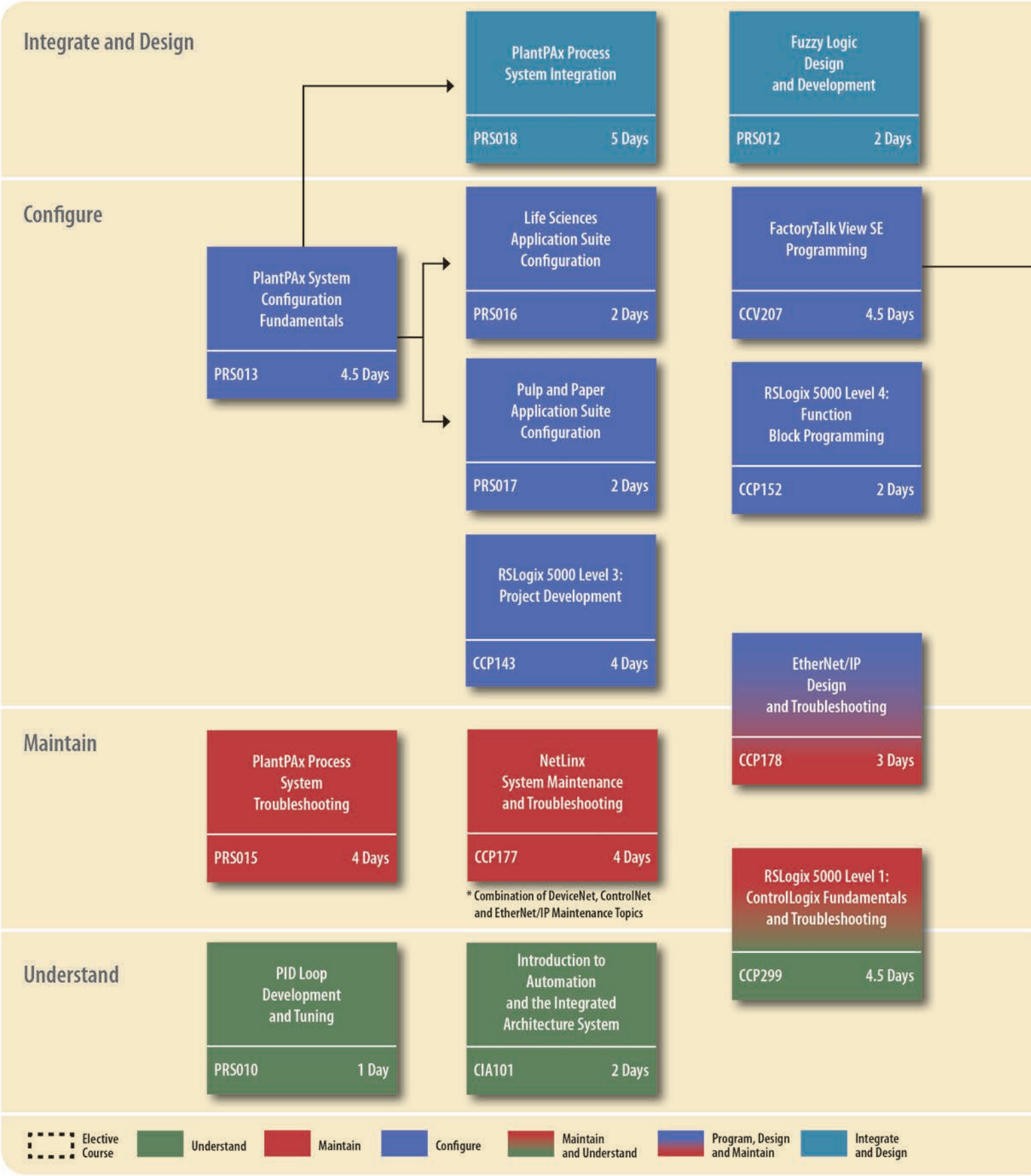
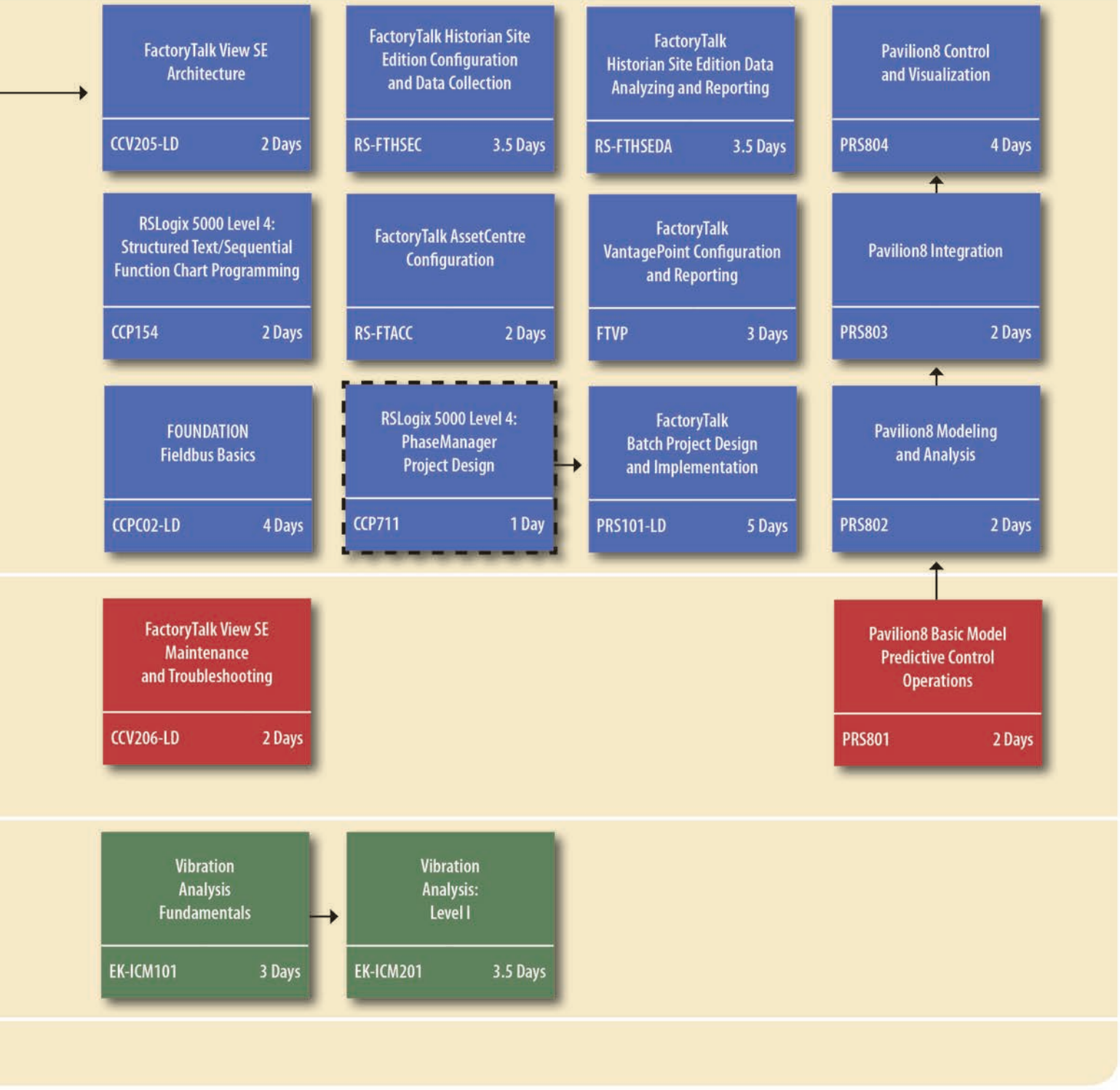
Process Control

Process Control Curriculum Map PlantPAx Process Automation System





PID Loop Development and Tuning

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

PRS010

1 Day CEUs 0.7

Course Purpose

This course enables students to develop an understanding of process control by allowing them to practice PID control methods. This course prepares students for further process control classes with more specialized applications and design involvement. This course provides students with the skills needed to obtain a tuned process control loop for typical applications. Students will create and develop a process model; calculate proportional, integral, and derivative gains; verify gains using ladder diagram; practice PID programming in function block diagram and learn how to autotune typical PID loops.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Create a process reaction curve
- Develop a process model
- Determine the control action
- Configure program timing
- Program simple PID loop using function block diagram
- Calculate and verify PID gains in ladder diagram
- Autotune a PID loop

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000™ Procedures Guide	ABT-1756-TSJ50

Who Should Attend?

Individuals who need to learn:

- how to make basic PID design decisions
- how to program and configure PIDE instructions using function block diagram
- how to tune basic PID loops using manual methods and ladder diagram
- how to autotune

Difficulty Level Beginner

Prerequisites

- Completion of the *RSLogix™ 5000 Level 1: ControlLogix System Fundamentals* course (CCP146) or equivalent experience
- ISA Process Control Fundamentals training or equivalent experience is recommended but not required
- Knowledge of automation systems and experience using function block diagrams is helpful but not required

PlantPAx™ Process System Troubleshooting

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

PRS015

4 Days CEUs 2.8

Course Purpose

In this course, students will learn to troubleshoot equipment problems and failures in a PlantPAx process control system. Students will focus on these core areas: controller applications and associated PlantPAx add-on instructions; HMI applications and associated PlantPAx faceplates. During the course, students will use the PlantPAx library of add-on instructions and faceplates to isolate and diagnose problems with field devices, such as valves and motors, 4…20 mA analog instruments, HART and EtherNet/IP networks, drives, motor control centers, redundant controller chassis, and client-server communication.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Prepare equipment for restart
- Find Logix data online and I/O channel data
- Trace through function blocks
- Find I/O terminals for a device
- Diagnose a discrete output or input problem
- Isolate a non-alarm problem
- Diagnose a problem with permissives, interlocks, and a device mode problem
- Bypass a device
- Diagnose an analog input or output problem
- Diagnose a module or EtherNet/IP problem
- Isolate an HMI problem, a problem with a server, an I/O fault, a problem with a field device, or an alarm condition
- Diagnose cause of a controller switchover
- Check the server status
- Ping a server or workstation

Who Should Attend?

Individuals who have a background in process control but are new to PlantPAx

Difficulty Level Intermediate

Prerequisites

- Basic knowledge of common process industry terms and components
- Hands-on experience with other process control systems

Job Aids Included	Catalog #
PlantPAx Process System Troubleshooting Guide	ABT-P100-TSJ20

RSLogix 5000 Level 4: Function Block Programming

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP152

2 Days CEUs 1.4

Course Purpose

This course provides students with an understanding of RSLogix 5000 function block diagrams and terminology. Resources and hands-on practice are also provided to program a Logix5000 controller using function block diagrams. Students will perform parameter modifications to function block instructions and create and develop function block diagram programs and routines.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Create a function block diagram
- Program logical function block instructions
- Program timer and counter function block instructions
- Program analog function block instructions
- Program device driver function block instructions
- Insert ActiveX faceplates from function block instructions
- Select timing modes in a function block instruction
- Program and monitor an RMPS (ramp/soak) function block instruction
- Control program flow using function block instructions
- Program a function block PIDE instruction
- Develop an add-on instruction in function block diagram

Who Should Attend?

Individuals who:

- Are responsible for developing, debugging, and programming Logix5000 controllers using function block diagrams
- Use ActiveX controls in an operator interface, such as RSView®32 software

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft® Windows® environment
- Understanding of basic measurement and control theory, including basic loop control
- Completion of the *RSLogix 5000 Level 3: Project Development* course (CCP143) or equivalent experience

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50

Fuzzy Logic Design and Development

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

PRS012

2 Days CEUs 1.4

Course Purpose

This course provides students with the skills to produce a fuzzy control system for a continuous process application. It introduces the range of options for fuzzy systems but focuses on using fuzzy logic to adjust the gains of a PID loop to meet specific control requirements. Starting with a description of a process, students will decide if fuzzy logic is the best control method. Students will design the fuzzy system, develop it in FuzzyDesigner software, and implement it in a Logix5000 controller. Students will also use FuzzyDesigner's simulation, graphing, and online monitoring tools to validate the system against control requirements.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Decide when to use fuzzy logic
- Choose a control scheme
- Identify variable, terms, and membership parameters
- Write rules
- Create and enter FuzzyDesigner components
- Simulate execution of a a fuzzy system
- Graph inputs and outputs
- Create, monitor, and change a fuzzy add-on instruction

Who Should Attend?

Individuals who need to design, develop, or implement advanced process control applications

Difficulty Level Intermediate

Prerequisites

Ability to perform these RSLogix 5000 software skills:

- Entering and editing logic
- Downloading and going online
- Monitoring and editing data

Prospective students can complete the *RSLogix 5000 Level 1: ControlLogix Systems Fundamentals* course (CCP146) to aquire the prerequisite skils.

FOUNDATION Fieldbus Basics

CCPC02-LD

4 Days

Course Purpose

This advanced skill and knowledge building course provides students with the necessary foundations of using open protocols with multiple measurement technologies, such as temperature and pressure. Output devices, such as valve positioners, will also be covered. Students will be presented with FOUNDATION Fieldbus technologies using the Rockwell Automation 1757-FFLD and 1788-CN2FF linking device. Additional material on Device Descriptions, advanced function block theory, and troubleshooting techniques will be covered in this course. Students will perform hands-on exercises to provide them with an understanding of how to connect their Smart instrument networks to a Rockwell Automation system.

Course Objectives

After completing this course, students will understand the following topics:

- Fieldbus basics
- Fieldbus function blocks
- Fieldbus device description files
- Fieldbus communications
- Fieldbus wiring and media components
- Introduction to 1788-CN2FF and 1757-FFLD
- FFLD and CAS initialization
- FFLD-CLX troubleshooting exercises
- CN2FF fieldbus in ControlLogix
- CN2FF communications
- NIFBUS configurator
- Scheduling

Who Should Attend?

Individuals who have little or no working experience with Smart instrumentation or FOUNDATION Fieldbus

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Basic understanding of process instruments and function block programming
- Completion of the *RSLogix 5000 Level 2: Basic Ladder Logic Programming* course (CCP151) and/or
- Completion of the *RSLogix 5000 Level 3: Project Development* course (CCP143)

RSLogix 5000 Level 4: PhaseManager Project Design

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

CCP711

1 Day CEUs 0.7

Course Purpose

This course is intended to provide students with the skills to configure and program Logix5000 applications in accordance with the S88 state model using the PhaseManager feature. This course presents a tool that will help students effectively organize and structure batch applications. Students will organize an RSLogix 5000 project by identifying control and equipment modules within application code. Students will separate equipment code from equipment phase code, configure state logic to transition between equipment states, and complete a project that uses an internal sequencer to activate each of the equipment phases according to a batch procedure.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Define equipment phases and state models in an RSLogix 5000 project
- Separate equipment code from equipment phase code
- Test an equipment phase
- Configure an internal sequencer using phase instructions

Who Should Attend?

Individuals who need to apply the S88 state model to RSLogix 5000 projects for any Logix5000 controller

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 3: Project Development* course (CCP143) or advanced programming experience using RSLogix 5000 software
- Familiarity with sequential function chart programming language

FactoryTalk® Batch Project Design and Implementation

PRS101-LD

5 Days

Course Purpose

This course is designed to provide students with a complete overview of the design and implementation of a batch project using FactoryTalk Batch software. This includes an introduction to batch processing and to the ANSI/ISA S88.01 Standard. FactoryTalk Batch system architecture, system operation, and system configuration are covered in detail.

Course Objectives

After completing this course, students will understand the following topics:

- Define batching and the S88 Standard
- Work in FactoryTalk Batch and FactoryTalk View
- Define an area model from a P&ID
- Use FactoryTalk Equipment Editor
- Translate a product definition into a recipe
- Configure the Factory Talk Recipe Editor including the basic mechanics, divergent flow, class-based recipes, and enhanced unit binding
- Configure Batch Archiver and enhanced batch reporting
- Interface with the FactoryTalk Batch API and ActiveX controls
- Perform system administration tasks related to file structure, project folder, and security
- Equipment Phase – FactoryTalk Batch Communications (phase design and equipment phase instructions)
- Integrate manual phases and FactoryTalk Batch eProcedure
- Integrate material-based phases and the FactoryTalk Batch Material Manager

Who Should Attend?

Supervisors, operators, formulators, and engineers who will be involved with the installation, setup, and operation of a FactoryTalk Batch system

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Familiarity with S88 Batch Standard is helpful

PlantPAx System Configuration Fundamentals

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

PRS013

4.5 Days CEUs 3.2

Course Purpose

This course is intended for control engineers who have a background in process control – but are new to Rockwell Automation. This course introduces new students to the core components of a PlantPAx process control system, including controllers, HMI, networks, and instrumentation devices. Students will look at the individual components and see their relationships to the complete system.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify a PlantPAx system
- Locate ControlLogix components and organize ControlLogix data
- Create and organize a new project [RSLogix 5000]
- Configure device-level ring
- Program a function block diagram
- Configure PlantPAx AOI and devices using FOUNDATION fieldbus
- Use tag placeholders [SE]
- Configure global objects and PlantPAx faceplates [SE]
- Create a graphic display, tag database, alarm, data log model, and trend [SE]
- Set up reporting
- Configure Security [SE]
- Program and tune a PID loop [SE]
- Program considerations for applications [RSLogix 5000] and structured text
- Design an SFC
- Determine workstation layout and redundancy needs

Who Should Attend?

Individuals who develop process control applications who are new to Rockwell Automation

Difficulty Level Intermediate

Prerequisites

Basic knowledge of process control

Job Aids Included	Catalog #
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50
FactoryTalk View SE Procedures Guide	ABT-9701SE-TSJ50

Life Sciences Application Suite Configuration

PRS016

2 Days

Course Purpose

Upon completion of this course, students will be able to use a Rockwell Automation application suite to develop effective control applications for a PlantPAx process automation system. The focus of this course will be on the life science industry and applications, including topics such as electronic signatures, alarming, audit logs, and GAMP documentation. In this course, students will have the opportunity to create, configure, and develop working code to address a variety of application scenarios. Students will also experience the benefits of using a Rockwell Automation application suite through a combination of instruction and hands-on experience, which emphasize concepts, common features, and functions.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Locate components of the application suite
- Recognize common functions/configuration options in the application suite
- Program and configure RSLogix 5000 and FactoryTalk View SE systems
- Recognize industry-specific functions
- Select functions through configuration
- Operate and troubleshoot
- Locate reference material and access ongoing support
- Analyze and interpret application requirements
- Identify the repeatable portions of an application
- Determine the optimum use of the application suite for control applications
- Modify an application
- Coordinate, sequence, and manage equipment

Who Should Attend?

Individuals who need to maintain and/or troubleshoot a system which utilizes a Rockwell Automation application suite

Difficulty Level Intermediate

Prerequisites

- Completion of the *PlantPAx Process System Configuration* course (PRS013) or
- Personal experience with process applications, ControlLogix systems and programming, including basic ladder logic instructions, and FactoryTalk View SE applications

Pulp and Paper Application Suite Configuration

PRS017

2 Days

Course Purpose

Upon completion of this course, students will be able to use a Rockwell Automation application suite to develop effective control applications for a PlantPAx process automation system. The focus of this course will be on the pulp and paper industry and applications. In this course, students will have the opportunity to create, configure, and develop working code to address a variety of application scenarios. Students will also realize the benefits of using a Rockwell Automation application suite through a combination of instruction and hands-on experience, which emphasize concepts, common features, and functions.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Locate components of the application suite
- Recognize common functions and configuration options in the application suite
- Program and configure RSLogix 5000 and FactoryTalk View SE systems
- Recognize industry-specific functions
- Select functions through configuration
- Locate reference material and access ongoing support
- Analyze and interpret application requirements
- Identify the repeatable portions of an application
- Determine the optimum use of the application suite for control applications
- Modifying an application
- Coordinate, sequence, and manage equipment

Who Should Attend?

Individuals who need to maintain and/or troubleshoot a system which utilizes a Rockwell Automation application suite

Difficulty Level Intermediate

Prerequisites

- Completion of the *PlantPAx Process System Configuration* course (PRS013) or
- Personal experience with process applications, ControlLogix systems and programming, including basic ladder logic instructions, and FactoryTalk View SE applications

PlantPAx Process System Integration

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

PRS018

5 Days CEUs 3.5

Course Purpose

This course introduces students to the core components of a PlantPAx process control system, including system sizing, process automation controllers, engineering and operator workstations and process communication networks. During this course, students will focus on designing a PlantPAx system and learn to: architect and size a PlantPAx system, develop standard process control and advanced process control strategies, create process control applications withthe PlantPAx library of add-on instructions and faceplates, and create new interactive displays for operator workstationsincluding configuring alarming and security.

This course includes (but is not limited to) the basic concepts of the following components: software (RSLogix 5000,Process System Estimator, FactoryTalk View SE, FactoryTalk AssetCentre, FactoryTalk Historian SE, FactoryTalk VantagePoint, and Fuzzy Designer), networks (EtherNet/IP and HART), and modules (Controller, EtherNet, and Analog HART).

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Define system size with PlantPAx tools
- Monitor system loading
- Configure PlantPAx process objects, Logix batch sequence manager, advanced process control blocks, fuzzy logic, HART messaging, and HART faceplates
- Manage and configure process devices
- Record and report process information

Who Should Attend?

System Integrators who have a background in automated process control and Rockwell Automation products

Difficulty Level Intermediate

Prerequisites

To successfully complete this course, knowledge of basic automated process control and Rockwell Automation Logix Controllers and FactoryTalk View SE products is required.

Pavilion8 Basic Model Predictive Control Operations

PRS801

2 Days

Course Purpose

Upon completion of this course, students will be able to interact, use, and maintain their process control projects using the Pavilion8® Model Predictive Control (MPC) system. Topics covered in this course are: managing MPC system applications; creating, modifying, and using Pavilion8 console views; interacting with Pavilion8 controllers (adjusting objectives and tuning); maintaining and troubleshooting Pavilion8 controllers; interacting with and troubleshooting Pavilion8 RAE applications; and administering the Pavilion8 console system.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Introduce Pavilion8 MPC projects and solutions
- Use views
- Tune and troubleshoot a controller
- Review maintenance
- Introduce and troubleshoot Runtime Application Engine (RAE)
- Edit and build views
- Configure Key Performance Indicators (KPIs) and their views
- Administer the console
- Manage applications

Who Should Attend?

Operators, supervisors, plant managers, and engineers who are frequent users of an installed Pavilion8 MPC system

Difficulty Level Beginner

Prerequisites

There are no class prerequisites to attend this course but some exposure to the Pavilion8 MPC system through an existing MPC project, and experience in process control is beneficial.

Pavilion8 Modeling and Analysis

PRS802

2 Days

Course Purpose

Upon completion of this course, students should be able to develop inferential models and perform unit optimization using neural-network models. This course is usually attended in conjunction with the Pavilion8 Integrate course. Topics covered in this course are: planning the project; collecting an appropriate set of historical data; preconditioning the data (cut down times, filter, and create new variables); modeling physical systems using neural-networks; building a property predictor; optimizing unit operations; and building sensor validation models.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Outline modeling techniques and environment
- Process raw data
- Analyze data
- Create the dataset
- Build a nonlinear model
- Analyze and improve models
- Use the setpoints and what-ifs feature
- Build a sensor validation model and virtual online analyzer (VOA)

Who Should Attend?

Process engineers who are responsible for running steady-state VOA applications online or modifying and extending existing models in online applications

Difficulty Level Intermediate

Prerequisites

Completion of the *Pavilion8 Basic Model Predictive Control Operations* course (PRS801)

Pavilion8 Integration

PRS803

2 Days

Course Purpose

Upon completion of this course, students should be able to deploy Pavilion8-based models and supporting calculations on-line. This course is usually attended in conjunction with the Pavilion8 Modeling and Analysis course (PRS802). Topics covered in this course are: overview of the Runtime Application Engine (RAE); creating an on-line application; configuring a project with the RAE project builder; implementing the RAE client-server architecture; performing detailed testing of communication links; and connecting a RAE to a Distributed Control System (DCS).

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Outline Runtime Application Environment (RAE)
- Understand the Pavilion Data Interface (PDI)
- Use the application launcher
- Edit taglists
- Develop an online dataset
- Create an RAE project
- Configure and testing the project
- Run the project online
- Implement a Virtual Online Analyzer (VOA)

Who Should Attend?

Process engineers who are responsible for developing new steady-state VOA applications or modifying and extending existing steady-state VOA applications

Difficulty Level Intermediate

Prerequisites

- Completion of the *Pavilion8 Modeling and Analysis* course (PRS802)
- Basic knowledge of data historians and distributed control systems

Pavilion8 Control and Visualization

PRS804

4 Days

Course Purpose

Upon completion of this course, students should be able to develop and deploy model predictive control projects using the Pavilion8 Controller. Topics covered in this course are: planning the Model Predictive Control (MPC) project; building a Virtual Online Analyzer (VOA) for control variable prediction; creating steady-state models for optimization; planning and executing plant tests; conducting SISO and MIMO dynamic identification; tuning a non-linear dynamic controller; deploying the Pavilion8 controller using client-server architecture; performing detailed testing of communication links; and commissioning the MPC project.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Outline model predictive control
- Review data requirements
- Get and evaluate step test data
- Identify linear dynamics
- Build nonlinear control models
- Combine steady state and dynamic models
- Assemble the controller model
- Handle integrating models
- Examine the objective function
- Tune the controller
- Use the simulator
- Prepare the controller for online deployment
- Run the controller online
- Put an example application online
- Overview of visualizing controller data and trends
- Review Pavilion8 engine and console architecture
- Configure an application in the console
- Troubleshoot an existing application

Who Should Attend?

Engineers who are responsible for developing MPC applications or modifying and extending existing MPC applications

Difficulty Level Advanced

Prerequisites

- Completion of the *Pavilion 8 Modeling and Analysis* course (PRS802)
- Completion of the *Pavilion8 Integration* course (PRS803)

Instructor-Led Training

In a World of Technology, Your People Make the Difference

Take Advantage of the Rockwell Automation Difference

- Subject-Matter Expertise – our technologies, our curriculum
- Experienced Technical Instructors – real-world experience and product expertise
- Course Materials – award-winning, student materials for classroom use and ongoing review
- Pre- and Posttesting – testing to quantify knowledge transfer and to demonstrate a return on investment
- Workstations – factory simulation tools for experiential learning
- Job Aids – procedures and troubleshooting tools for quicker and accurate performance and problem-resolution of the plant floor
- International Association for Continuing Education and Training – authorized provider status offers valuable CEUs for professional development

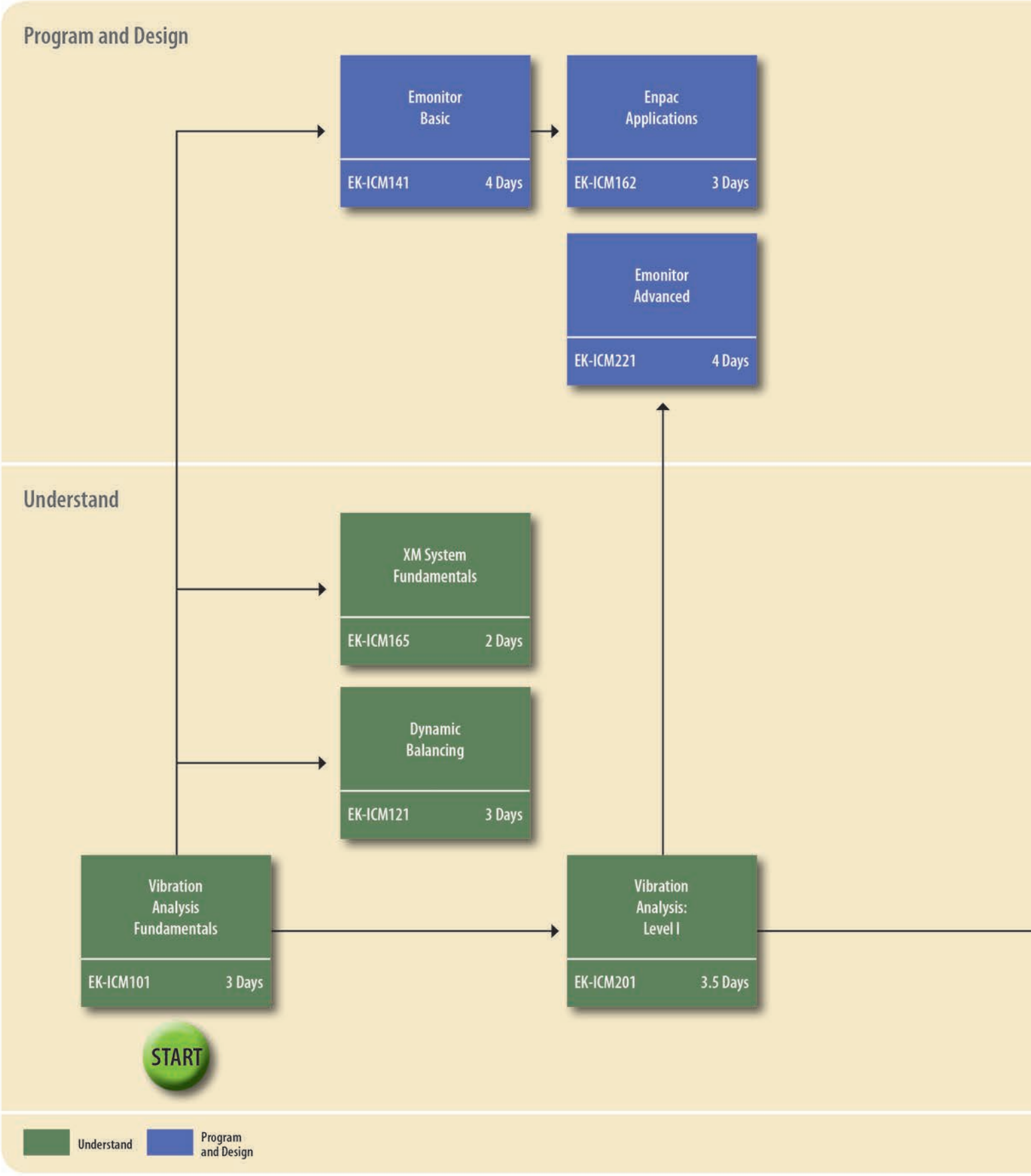
Improving human performance and overall profitability begins with your investment in instructor-led training

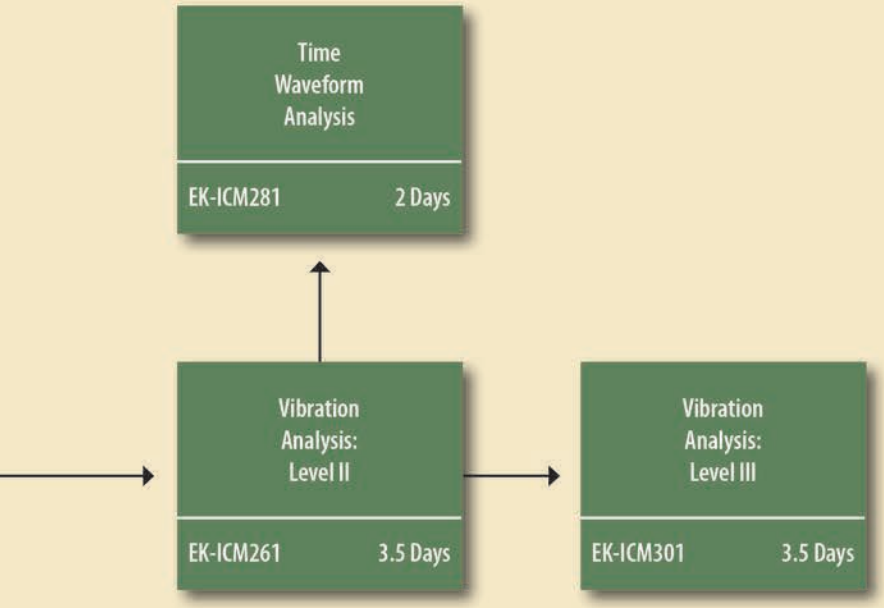
Achieving your peak manufacturing performance requires a blend of technologies and processes driven by highly trained employees. Rockwell Automation instructor-led training delivers just that. Factory-trained instructors understand your production issues and bring a broad range of hands-on experience and product expertise from a variety of industries and manufacturing environments. Because our instructors are well-versed in implementing products across various environments, you can be certain that the crucial knowledge will transfer to your plant floor.

Rockwell Automation ensures that your employees receive training that is job task relevant for your needs—students are trained on what they need to accomplish and be able to perform. Task based training requires active participation in the classroom because tasks build upon each other and increase in complexity, resulting in practice that guarantees effective job performance after the training is completed.

Condition Monitoring

Condition Monitoring Curriculum Map





Vibration Analysis Fundamentals

EK-ICM101

3 Days

Course Purpose

This course is designed for the new user of vibration analysis or predictive maintenance instrumentation or for the individual that desires to become more familiar with the basics of vibration. The relationship between the mechanical condition of machinery and vibration is presented. This background helps show how vibration detection and analysis can be used in a cost-effective program to identify machinery problems and schedule repairs to avoid costly machine downtime. Basic vibration measures including amplitude, frequency, and phase are discussed. Students will realize significant benefits from the practical hands-on measurement exercises using modern data collectors and analyzers. The material in this course is applicable to all vendors' vibration data collection or analysis equipment.

Course Objectives

After completing this course, students will understand the following topics:

- Introduction to vibration technology, analysis, and dynamic balancing
- Characteristics of vibration
- Vibration frequency, amplitude, and phase-to-machine condition
- Review of severity charts
- Instruments for vibration detection and analysis
- Transducer selection and mounting methods
- Calculate trial and correction weights
- Differences between displacement, velocity, and acceleration
- Identify the most common machinery problems
- Implement a predictive maintenance program

Who Should Attend?

Individuals involved in the maintenance or operation of plant machinery

Difficulty Level Beginner

Prerequisites

There are no prerequisites for this course.

Vibration Analysis: Level 1

EK-ICM201

3.5 Days

Course Purpose

The fundamental information necessary to implement and operate a successful predictive maintenance program is presented in this seminar. Vibration basics and the relationship between vibration and machinery condition are reviewed. Proven techniques for specifying meaningful overall and spectrum band alarm limits for a wide variety of machinery is presented. An optional certification test is administered during the last half day of this course. The material in this course is applicable to all vendors' vibration data collection or analysis equipment.

Course Objectives

After completing this course, students will understand the following topics:

- Characteristics of vibration and review of severity charts
- Vibration transducer overview and selection criteria
- Role of spike energy, HFD, and shock pulse and alarm levels
- Vibration signature analysis to diagnose machine problems
- How to track rolling element bearing health
- Methods for specifying spectral alarm band levels and frequencies
- Common pitfalls in vibration measurements
- Digital vs. analog overall vibration measurement

Who Should Attend?

Mechanics, technicians, engineers, or analysts involved in the maintenance or operation of plant machinery

Difficulty Level Intermediate

Prerequisites

- 6 months or more of field experience
- Completion of the *Vibration Analysis Fundamentals* (EK-ICM101) or similar course.

Vibration Analysis: Level II

EK-ICM261

3.5 Days

Course Purpose

This seminar is designed to advance the knowledge base of vibration analysts having one to three years of experience. The course begins with a brief review of Vibration Analysis I topics and then moves to more in-depth applications of the illustrated vibration diagnostic chart. Advanced alarm setting techniques based on statistical analysis are explained for both overall and band alarms. Advanced measurement techniques including natural frequency testing and high frequency envelope signal analysis are covered. An optional certification test is administered during the last half day of this course. The material in this course is applicable to all vendors' vibration data collection or analysis equipment.

Course Objectives

After completing this course, students will understand the following topics:

- Data acquisition and FFT processing for reliable spectral analysis
- Introduction to natural frequency test methods
- Vibration diagnostics using phase analysis and cascade diagrams
- Vibration signature analysis using the vibration diagnostic chart
- Introduction to Narrowband Envelope (statistical) alarms
- Introduction to isolation and damping

Who Should Attend?

Mechanics, technicians, engineers, or analysts involved in predictive maintenance or vibration analysis

Difficulty Level Intermediate

Prerequisites

- 12 months or more of field experience
- Completion of the *Vibration Analysis: Level 1* (EK-ICM201) or similar course

Vibration Analysis: Level III

EK-ICM301

3.5 Days

Course Purpose

In this advanced course, several powerful techniques, including high frequency envelope signal analysis, time waveform, and deflection shape analysis, are presented to increase the effectiveness of experienced vibration analysts. The analysis of high speed, low speed, and variable speed machinery is presented with consideration of the special transducer and instrumentation requirements of these applications. An optional certification test is administered during the last half day of this course. The material in this course is applicable to all vendors' vibration data collection or analysis equipment.

Course Objectives

After completing this course, students will understand the following topics:

- Introduction to motor current spectral analysis
- How to detect problems with DC motors and their controls
- Time waveform analysis
- How to analyze high speed machines
- How to analyze variable speed machines
- How to evaluate the achievements of your plant's condition monitoring program

Who Should Attend?

Mechanics, technicians, engineers, or analysts involved in predictive maintenance or vibration analysis

Difficulty Level Advanced

Prerequisites

- 18 months or more of experience in vibration analysis or predictive maintenance
- Completion of an Entek *Vibration Analysis: Level II* (EK-ICM261) or other similar course is recommended.

Dynamic Balancing

EK-ICM121

3 Days

Course Purpose

Identifying and effectively correcting balance problems are the focus of this course. The course begins by defining unbalance and explaining the benefits of properly balanced rotating machinery. Various methods of solving unbalance problems including single-plane, two-plane, and multi-plane techniques are presented. Each of these solution methods is taught for both in place field balancing and balancing machine applications. An optional certification test is administered during the last half day of this course.

Course Objectives

After completing this course, students will understand the following topics:

- Introduction to dynamic balancing
- Basic principal of balancing
- Use of phase to determine the types of unbalance
- Two-plane and multi-plane balancing techniques
- Critical speed/resonance
- Single-plane vector balancing
- Dividing and combining correction weights
- Weight removal and flat stock conversion charts
- Recommended tolerances
- Balancing overhung rotors

Who Should Attend?

Individuals who:

- Have involvement in balancing and machine reliability
- Currently do balancing work either on a balancing stand or in the field
- Specify balancing tolerances or design machines

Difficulty Level Intermediate

Prerequisites

There are no prerequisites for this course, but previous balancing experience is helpful and completion of the *Vibration Analysis Fundamentals* (EK-ICM101) course is recommended.

Time Waveform Analysis

EK-ICM281

2 Days

Course Purpose

This course emphasizes the use of time waveform data to accurately identify a wide range of vibration phenomena not easily detected using spectral data. Real-world case histories are used to demonstrate how time waveform analysis can identify problems likely missed by standard spectral analysis, as well as to confirm results of spectral analysis. The material in this course is applicable to all vendors' vibration data collection or analysis equipment.

Course Objectives

After completing this course, students will understand the following topics:

- Introduction to Time Waveform Analysis (TWA)
- Time Waveform benefits and fundamentals
- Setup parameters for TWA
- Interpretation of Time Waveform data
- Natural frequency testing
- Time synchronous averaging
- Case histories utilizing Time Waveform Analysis

Who Should Attend?

Experienced analysts who have a thorough understanding of vibration fundamentals and want to better use this important diagnostic tool

Difficulty Level Advanced

Prerequisites

- Completion of the *Vibration Analysis: Level II* (EK-ICM261) or similar course
- 9…12 months of experience with vibration spectral analysis is recommended

XM® System Fundamentals

EK-ICM165

2 Days

Course Purpose

This course is a skill-building course that provides students with a basic understanding of XM systems and terminology. This course also introduces students to XM system components and functionality. Students will have an opportunity to use the XM Serial Configuration Utility and RSMACC™ software to perform various software tasks. In addition, students will be introduced to vibration fundamentals and will have an opportunity to configure proximity probes and accelerometers connected to XM modules. Connecting non-vibration measurement devices to the appropriate XM module will also be discussed.

Course Objectives

After completing this course, students will understand the following tasks and topics:

- Characteristics of vibration
- Introduction to RSMACC
- Configure XM modules through RSMACC and XM serial configuration utility
- Set-up measurements and alarms for XM systems
- Overview of each XM module
- Use of the XM440 master relay module

Who Should Attend?

Individuals who have little or no working experience with XM systems

Difficulty Level Beginner

Prerequisites

- Experience operating a computer within a Microsoft® Windows® environment
- Completion of the *Vibration Analysis Fundamentals* (EK-ICM101) is recommended

Emonitor® Basic

EK-ICM141

4 Days

Course Purpose

This course will put students on the fast track to success using Emonitor. Students will become familiar with the features and operation of Microsoft Windows and Emonitor. Instruction on the basics of installation, database set-up, and loading/unloading data collectors guide you through the process of gathering machinery information. Interpreting this information using a variety of plots and reports is then covered, helping students put their system to work solving machinery problems.

Course Objectives

After completing this course, students will understand the following tasks:

- Building a database
- Adding machines, locations, and measurements
- Creating, saving, and using lists
- Using templates and editing existing databases
- Loading and unloading
- Importing data
- Creating custom plots
- Using plots and reports with word processors
- Overview of Windows and Emonitor
- Plot overview and options
- Reports
- Alarm setup and options
- Overview of frequency items

Who Should Attend?

Anyone who is new to Emonitor and must use it either daily to complete their duties or only occasionally to look up data, run reports, or act as a system administrator

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *Vibration Analysis Fundamentals* (EK-ICM101) or similar course

Emonitor Advanced

EK-ICM221

4 Days

Course Purpose

This course helps the established user increase their efficiency and their overall program effectiveness using Emonitor Odyssey/Enshare. In-depth coverage of the program provides students with the information they need to customize operations for specific machine applications. Set-up of advanced measurements and custom templates tailor the database to fit difficult machine applications. Customized reporting and plotting allows students to design program output that is most readily understood within their plant. The statistical alarming capabilities are covered thoroughly in this course, providing students with the most powerful tool for efficient use of overall, band, and narrow-band spectral alarms.

Course Objectives

After completing this course, students will understand the following tasks and topics:

- Measurement options and advanced list options
- Special measurements
- Load/unload and data import review
- Detailed plotting
- Create custom reports and plots
- Statistical alarms and outlier detection
- Spectral band and narrow-band alarming
- Configure and use frequency items
- Plot overlay, linking and locking

Who Should Attend?

Established users of Emonitor Odyssey/Enshare who have one or more years of experience using the product

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- One year or more experience with Emonitor Odyssey/Enshare
- Completion of the *Vibration Analysis: Level 1* course (EK-ICM201)

Enpac® Applications

EK-ICM162

3 Days

Course Purpose

This course covers the full range of operations of the Enpac 1200 and Enpac 2500, from basic to advanced, providing excellent information for beginning or experienced Enpac users. Basic operations including loading, unloading, and collecting overall and spectrum data are presented, as well as advanced measurement techniques, such as time waveform collection, time synchronous averaging, phase measurement, and spike energy spectrum collection. The Enpac two-plane balancing and two-channel applications are also covered in this course.

Course Objectives

After completing this course, students will understand the following topics:

- Enpac operating program and setup options
- Route configuration and data collection options
- Transfer of data between the Enpac and Emonitor
- Time Synchronous measurements
- Two-channel measurements
- ESP and spike energy overview
- Phase measurements
- Balancing with the Enpac
- Off route data collection and transfer to Emonitor
- Cross channel phase

Who Should Attend?

Individuals who use the Enpac and would like to learn more about the instrument's data collection and vibration analysis capabilities

Difficulty Level Intermediate

Prerequisites

- Completion of the *Vibration Analysis Fundamentals* (EK-ICM101) or similar course
- Completion of the *Emonitor Basic* course (EK-ICM141) is recommended
- 3…6 months of experience with the Enpac 1200 or Enpac 2500 is recommended

Software


My Company | Site A | Filling_A | Line 1
12Filler
Current Shift Start:
Shift Name:
OEE (%)
Availability (%)
Performance (%)
Quality (%)
91.3
93.3
90.2
Current Shift Counts
Current Shift Time
Total
Good
Scrap
Total
Scheduled
Available
Running
Downtime
Start Time
00:00:01
Current State
Description
Running

Software

Rockwell Automation software courses address today's diverse plant information needs, such as:

- Production management – real-time coordination across plant-wide production processes
- Data management – tools and methods used for collecting, transforming, and integrating production information
- Asset management – optimizing maintenance and plant operations to improve resource availability
- Performance and visibility – offering a window into the process so plant personnel can make better decisions

Real-time exchange of information between manufacturing and the rest of your company is critical for making business decisions that improve responsiveness, increase productivity, and reduce costs. With Rockwell Automation software courses, you can learn how to integrate your factory floor.

Course Number	Course Name	Course Length
RS-FTACC	FactoryTalk® AssetCentre Configuration	2 Days
RS-MSSQLB	Microsoft® SQL Server for FactoryTalk Introduction	2 Days
RS-FTMHCC	FactoryTalk Metrics with Historian Classic Configuration	4 Days
RS-RSMACC	RSMACC Installation and Configuration	3 Days
RS-FTTM	FactoryTalk Transaction Manager	3 Days
RS-RSTS101-LD	RSTestStand™ Enterprise Project Development	2 Days
RS-FTHSEC	FactoryTalk Historian Site Edition Configuration and Data Collection	3.5 Days
RS-FTHSEDA	FactoryTalk Historian Site Edition Data Analyzing and Reporting	3.5 Days
FTVP	FactoryTalk VantagePoint Configuration and Reporting	3 Days
VBAFTVSE	Microsoft VBA Configuration with FactoryTalk View SE Applications	4 Days
RS-EMPM	Power Monitor Installation and RSEnergyMetrix® Software Configuration in an Energy Monitoring System	2.5 Days

FactoryTalk® AssetCentre Configuration

RS-FTACC

2 Days

Course Purpose

This course provides students with a set of asset-centric focused tools to securely and centrally manage factory and process automation production environments. FactoryTalk AssetCentre will help students secure access to the control system, track users' actions, manage asset configuration files, configure process instruments and provide backup and recovery of operating asset configurations. In this course, students will have the opportunity to load the software and practice many critical tasks, such as implementing disaster recovery (continuation planning), tracking user actions, improving plant-floor security, and protecting intellectual property.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Install FactoryTalk AssetCentre software
- Install the FactoryTalk AssetCentre client remotely
- Configure FactoryTalk AssetCentre audits
- Configure FactoryTalk AssetCentre disaster recovery
- Configure FactoryTalk AssetCentre archive
- Understand FactoryTalk AssetCentre searches
- Understand FactoryTalk AssetCentre address book and e-mail notification

Who Should Attend?

Individuals who need to securely and centrally manage factory and process automation production environments

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft® Windows® environment
- Knowledge of your production environment is recommended

Microsoft® SQL Server for FactoryTalk Introduction

RS-MSSQLB

2 Days

Course Purpose

This course provides students with the technical skills required to implement a database solution with Microsoft SQL Server client/server database management system.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Describe the elements of Microsoft SQL server and the Transact-SQL language
- Describe and configure the data storage architecture of SQL server
- Create and manage files, file groups, databases, tables, and transaction logs
- Enforce data integrity using constraints, defaults, and rules
- Create and maintain indexes
- Write queries that retrieve and modify data using joins and subqueries
- Create views of data

Who Should Attend?

Individuals who will use FactoryTalk software as the database solution for projects used in conjunction with Microsoft SQL Server client/server database management system

Difficulty Level Intermediate

Prerequisites

- Experience using the Microsoft Windows NT® server network operating system
- Completion of a basic programmable controller course

FactoryTalk Metrics with Historian Classic Configuration

RS-FTMHCC

4 Days

Course Purpose

In this course, students will learn to use Historian's data collection and data analysis functions to perform logging, reporting, and viewing of data. Students will also learn to use the reporting, graphing, and querying functionality that make FactoryTalk a complete and very easy-to-use solution for data collection and analysis.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Create a FactoryTalk metrics database and user
- Create system DSN
- Install FactoryTalk Metrics software and RSLinx Enterprise
- Administrate FactoryTalk Metrics with the service console
- Create a FactoryTalk application
- Create FactoryTalk Metrics plant model
- Configure FactoryTalk Metrics workcell and user defined events
- Create FactoryTalk Metrics report data source
- Create text and chart reports
- Install and use the FactoryTalk Metrics Report Expert
- Create OEE box and detail reports
- Collect time series data, trend chart, compressed data, and storage options
- FactoryTalk Metrics machine states
- External data source
- Excel add-in

Who Should Attend?

Individuals who need to collect PLC data, as well as analyze and report that data

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- A basic understanding of PLC processors
- Knowledge of basic client/server database concepts is recommended, but not required
- Familiarity with basic networking concepts is strongly recommended, but not required
- Knowledge or experience with Microsoft SQL Server is helpful

Savings and Flexibility - Training Savings Account

Do you have diverse employee development needs and want to maximize your training budget?

Our Training Savings Account maximizes your training budget by allowing you to deposit dollars into a dedicated account for future training expeditures. Use this account to purchase Rockwell Automation training products, courses, and e-Learning at a discount (20%). You can make withdrawals from your account as needed without any administrative hassle at the time that best meets the individual needs and schedule of each employee.

For more information, call 440-646-3434 (option 4), contact your local Rockwell Automation sales office or Allen-Bradley distributor, or visit:

www.rockwellautomation.com/training

RSMACC Installation and Configuration

RS-RSMACC

3 Days

Course Purpose

The purpose of this course is to provide students with fundamental information on the RSMACC software package, to include planning an RSMACC system, installation, configuration, and change management. Students will receive hands-on practice using the various RSMACC components in live lab networked environments.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Install RSMACC server components on server machine
- Configure RSMACC server
- Install RSMACC client components on client machine
- Configure RSMACC client machine
- Install and configure RSMACC change management
- Install and configure RSMACC network health components
- Understand RSMACC Enterprise Online Condition Monitor (EOL) components
- Understand RSMACC Automated Asset Manager (AAM) components

Who Should Attend?

Individuals who:

- Have recently purchased an RSMACC system
- Have systems installed and want to upgrade their knowledge of Change Management, Network Health, Condition Monitoring, or AAM Components

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Basic understanding of databases

FactoryTalk Transaction Manager

RS-FTTM

3 Days

Course Purpose

In this course, students will learn about configuring FactoryTalk Transaction Manager in a Microsoft SQL Server environment. Students will also work with FactoryTalk Services Platform and Transaction Manager components. Then, students will bind processor datapoints to SQL database fields using the FactoryTalk graphic interface. Upon completion of this course, students will be able to create single-computer and distributed FactoryTalk configurations, edit a running transaction, understand the concepts for creating transactions, understand the reasons for handshaking with the control system, and configure and use the update object.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Edit a running FactoryTalk Transaction Manager application
- Configure a unidirectional transaction with bind transaction result
- Understand handshaking errors and data/loss results
- Recognize FactoryTalk Transaction Manager built-in functions
- Configure math functions minimum maximum and average
- Configure advance functions
- Configure FactoryTalk Transaction Manager
- Move a FactoryTalk Transaction Manager application

Who Should Attend?

Engineers, plant managers, and maintenance personnel who use PLC data to manage or maintain plant processes

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Experience with SQL database software

RSTestStand™ Enterprise Project Development

RS-RSTS101-LD

2 Days

Course Purpose

This course provides students with a working knowledge of the RSTestStand Enterprise control systems simulation software. Upon completion of this course, students will gain the skills to create, validate, troubleshoot, and tune RSTestStand Enterprise Projects using RSTestStand simulation software. This course also provides hands-on practices to reinforce the tasks involved in designing, testing, and implementing an effective simulation model of a machine and/or process. From creating and running project models and run-time scenarios to animating scenes and binding actions to resources, students will have the opportunity to fully understand the capabilities of RSTestStand Enterprise simulations and the benefits of this virtual modeling process with regard to start-up time, design flaw identification, problem resolution, and end-user training.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Create a project model
- Create and modify resources
- Build operator consoles and create a connection diagram
- Create run-time scenarios
- Create, animate, and control scenes
- Create and run a Part Flow Model and bind actions to resources
- Build logical views
- Troubleshoot and tune RSTestStand Enterprise projects using productivity tools
- Simulate and validate a project model

Who Should Attend?

Individuals who are responsible for designing, starting up, installing, and troubleshooting automation control systems and equipment

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Basic understanding of PLC processors or completion of the *PLC-5/SLC 500 and RSLogix Fundamentals* course (CCP122)
- Knowledge of basic VB scripting concepts
- Familiarity with basic OPC and detailed understanding of RSLinx software is recommended

FactoryTalk Historian Site Edition Configuration and Data Collection

RS-FTHSEC

3.5 Days

Course Purpose

This course will provide students with an overview of the various FactoryTalk Historian tools for collecting data. Students will learn how to install and configure a FactoryTalk Historian Site Edition system and how to use Microsoft Excel to create and modify FactoryTalk Historian tags. During the course, students will learn how to apply exception and compression to filter data to be archived. Students will be given an opportunity to compare the use of Polled versus Advised data collection modes and learn about data buffering, layers/methods of redundancy, archive management and backup. Upon completion of the course, students will have gained exposure to the many aspects of the FactoryTalk Historian system and be able to install and configure FactoryTalk Historian to collect data.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Install FactoryTalk Historian
- Use Discover Historian points, data collection with handshaking, FTLD Health Points and Archive Management Tools, and audit information
- Understand Historian tags and use Excel tag configurator, exception & compression and basic alarms
- Configure event trigger reads/basic output points, event framing-BaGen, performance equations/totalizers, and interface redundancy/collectives
- Buffer disturbed FTLD interface data
- Work with digital states
- Schedule backups of Historian data
- Use data collection modes of polled vs. advised
- Use BatchView
- Use and display audit information

Who Should Attend?

Individuals who need to install and configure FactoryTalk Historian Site Edition for data collection

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 1: ControlLogix System Fundamentals* (CCP146) course or knowledge of common ControlLogix terminology and the ability to program and interpret basic ladder logic instructions in RSLogix 5000 software

FactoryTalk Historian Site Edition Data Analyzing and Reporting

RS-FTHSEDA

3.5 Days

Course Purpose

In this course, students will learn various tools to analyze and display data collected by FactoryTalk Historian. Students will also learn how to use the updated trend object in FactoryTalk View SE applications. Students will have an opportunity to use FactoryTalk Historian DataLink that accesses data from FactoryTalk Historian and reports it in Microsoft Excel. This course will also focus on the use of FactoryTalk Historian ProcessBook to create applications for displaying real-time and historical data. Upon completion of the course, students will be able to utilize many tools and techniques for the display, analysis and reporting of FactoryTalk Historian data.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Use View SE updated trend object to display Historian data
- Use data sets, dynamic elements, and relative objects in ProcessBook
- Use DataLink filtered compressed, time filtered, and calculated function
- Use reporting services
- Create and edit ProcessBook trends
- Insert ProcessBook displays in View SE via ActiveView
- Configure and use ProcessBook SQC
- Insert DataLink trend objects
- Configure and use Totalizer reporting modes
- Use DataLink sampled vs. compressed data, archived data and digital tags, and advanced calculated data
- View data from an SQL server database using ProcessBook

Who Should Attend?

Individuals who will work with existing FactoryTalk Historian Site Edition applications and need to view, analyze and create reports based on the data collected

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Level 1: ControlLogix System Fundamentals* (CCP146) course or knowledge of common ControlLogix terminology and the ability to program and interpret basic ladder logic instructions in RSLogix 5000 software

FactoryTalk VantagePoint Configuration and Reporting

FTVP

3 Days

Course Purpose

In this course, students will learn various tools to analyze and display data using FactoryTalk VantagePoint and/or VantagePoint EMI. The course covers how to use the analysis and reporting tools to create trends, XY Plots, Excel reports, and dashboards. Students will have an opportunity to use the Portal and configure it to display content in various ways. The course also focuses on extending the model in the product and configuring security. Upon completion of the course, students will be able to utilize many tools and techniques for the display, analysis and reporting of data using FactoryTalk VantagePoint and/or VantagePoint EMI.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Extend the logical model
- Create and publish trends and VantagePoint Excel reports
- Create and use types and type reports in VantagePoint
- Add types and mapping rules to import ControlLogix UDTs
- Use type and instance packages
- Create and publish trends using types mapped to UDTs
- Create and publish Excel reports and trends using types mapped to UDTs
- Pass parameters to reports using hyperlinks
- Create composite and dashboard reports
- Use VantagePoint security, portal views, and type rules
- Use incuity tags for data entry, calculated tags, XY Plotter
- Create an SQL connector, query item, tag provider, mapped type, and security role
- Modify the portal theme

Who Should Attend?

Individuals who will work with FactoryTalk VantagePoint and/or VantagePoint EMI applications and need to view, analyze, and create reports

Difficulty Level Intermediate

Prerequisites

Experience with:

- Microsoft SQL Server 2005 and SQL language
- Microsoft Office Excel 2007
- ControlLogix and FactoryTalk products and terminology

Microsoft VBA Configuration with FactoryTalk View SE Applications

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

VBAFTVSE

4 Days CEUs 2.8

Course Purpose

In this course, students will learn to develop and implement Visual Basic for Applications (VBA) procedures or subroutines within a FactoryTalk View SE project. The course covers VBA concepts, an overview of the VBA language, the FactoryTalk View SE software object model, and the creation, modification, and execution of VBA procedures from within FactoryTalk View SE software. Students will also learn the fundamentals of Microsoft Excel, Word, and Access object models. Interacting with these object models from within the FactoryTalk View SE VBA procedures will allow students to create applications that perform such tasks as creating and printing Word documents or Excel spreadsheets with charts, and reading and writing to Access database files.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Configure VBA within a FactoryTalk View SE project
- Configure UserForms and events in FactoryTalk View SE VBA
- Debug tools and error handling in VBA
- Trigger a command on a client from an HMI server
- Access the FactoryTalk View SE object model from an external automation controller
- Control Microsoft Excel, Word, and Access with VBA
- Configure OPC automation with VBA
- Configure a trend object

Who Should Attend?

Individuals who wish to implement VBA procedures within their FactoryTalk View SE projects to meet application requirements

Difficulty Level Intermediate

Prerequisites

- Familiarity with the Windows XP user interface and FactoryTalk View SE software
- Familiarity with processors

Power Monitor Installation and RSEnergyMetrix® Software Configuration in an Energy Monitoring System

RS-EMPM

2.5 Days

Course Purpose

With RSEnergyMetrix, students can capture, analyze, store, and share energy data across their entire enterprise using a simple Web browser. This makes it simple to distribute the knowledge students need to optimize energy consumption, which can help improve productivity while lowering energy costs. This course provides students with an understanding of 3-phase power fundamentals and how energy is paid for.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Understand AC power and PEM products power monitors
- Install and configure RSEnergyMetrix software
- Understand the basics of RSEnergyMetrix software
- Create RSEnergyMetrix custom reports

Who Should Attend?

Solution providers, managers, engineers, and technical specialists who need to install and configure Allen-Bradley power monitors and RSEnergyMetrix software in order to solve on-going, energy-related challenges

Difficulty Level Intermediate

Prerequisites

- Basic understanding of 3-phase electric power
- Basic understanding of Rockwell Automation Integrated Architecture products, networks, and software

It would also be helpful to have a basic understanding of internet server applications, Microsoft SQL Server and Microsoft Visual Basic scripting

Silver Courses

Silver Courses

Rockwell Automation silver courses provide training for legacy or specialized automation products that are not typically included and advertised in the Rockwell Automation Training Services national course schedule as private classes held either at a Rockwell Automation training facility or on-site at your own facility. You can schedule these courses by contacting your local Rockwell Automation sales office or Allen-Bradley distributor. Minimum class size is eight students and the maximum is twelve students.

Course Number	Course Name	Course Length
CCA124	1336 FORCE Maintenance and Troubleshooting	3 Days
CCA132	1336 IMPACT Troubleshooting	1 Day
CCA133	1336 IMPACT Start-Up	1 Day
CCA134	1336 Force Start-Up	3 Days
CCA135	1336 IMPACT Communications	1 Day
CCA138	1336 IMPACT Programming	1 Day
CDD131	1395 Drive Maintenance and Troubleshooting	3 Days
CCN184	1394 and GML Commander Programming	4.5 Days
CCP710	PLC-5 to ControlLogix Transitioning	2 Days
CCPS66	SLC 500 to PanelView 550/600 Terminal Communications	2 Days
CCV202	FactoryTalk View ME and PanelView Plus Conversion	1 Day
CCP198	PanelView 100e/1200e/1400e Application Developement	2 Days
CCN191-LD	Ultra™ 3000 Programming	1 Day
EK-ICM161	Datapac® Applications	3 Days
RE0521	AutoMax DC Drive Distributed Power System	4 days
RS-FTHMEC	FactoryTalk Historian ME Configuration and Data Collection	2 days

Industrial Maintenance

Industrial Maintenance Courses

Top Industrial Courses Offered

Safety

Course	Course Code
Machine Safety Seminar	SAF-SEM
Lock-out/Tag-out Implementation	SAF-SFT100
Electrical Safety Awareness	SAF-SFT101
NFPA 70E – Arc Flash Awareness	SAF-SFT106
NFPA 70E — Electrical Safety and Arc Flash Compliance	SAF-SFT112
Lock-Out/Tag-Out Implementation and Arc Flash Awareness	SAF-SFT117
Plant Floor Arc Flash/LOTO/Confined Space Safety	SAF-SFT123

Electrical & Electronics

Course	Course Code
2011 National Electrical Code (NEC) Change Awareness	SAF-SFT12011
Industrial Electrical Controls Fundamentals	MFG213
Basics of Electricity	MFG244

Air and Fluid Power

Course	Course Code
Industrial Air Controls (Pneumatic) Fundamentals	MFG202
Industrial Fluid Power Fundamentals	MFG214
Industrial Hydraulic Equipment Troubleshooting	MFG236

Virtual Classroom

Course	Course Code
Machine Functional Safety and ISO 13849 System Design: Risk Assessment	VC-MFSISO-01
Arc Flash Awareness	VC-SFT106

Machine Safety Seminar

SAF-SEM

1 Day

Course Purpose

This seminar provides students with the foundation to better understand current safety regulations. Students should learn how to review and recommend changes or improvements to existing machine safeguards. Students should also learn how to reduce risk with machine safeguarding systems based on safety standards and risk assessment. Students will also be presented with strategies to reduce safety issues that interfere with their machine uptime. In addition, students should understand how to ensure their machine safeguarding will pass the next OSHA inspection.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Identify the building blocks to a successful machine safety program, as well as OSHA requirements and insights to compliance
- List key points of ANSI machine tool standards
- Employ basic risk assessment methodology
- Understand safety circuit design in compliance with ANSI and NFPA standards including circuit reliability levels
- Apply general application knowledge relating to safeguarding of devices

Prerequisites

There are no prerequisites for this course, but basic experience in a plant environment is recommended.

Who Should Attend?

Individuals who:

- Need to better understand the current safety regulations
- Are being asked to review and recommend changes or improvements to existing machine safeguards
- Want to learn how to reduce risk with machine safeguarding systems based on safety standards and risk assessment
- Have machine uptime affected by safety issues
- Are responsible for ensuring your machine safeguarding will pass the next OSHA inspection

Difficulty Level Beginner

Lock-out/Tag-out Implementation

SAF-SFT100

1 Day

Course Purpose

The purpose of this course is to provide students with proper lock-out and tag-out procedures. Using the OSHA Regulations (Standards - 29 CFR) you will learn regulations on how equipment energy sources should be secured and disabled for safe entry and or maintenance practices. Students will learn the following major OSHA requirements: the control of hazardous energy (1910.147), standard title: the control of hazardous energy (lock-out/tag-out), subpart number: J, and subpart title: general environmental controls.

Course Objectives

After completing this course, students will understand the following major OSHA requirements:

- National OSHA regulations (Standards – 29 CFR)
- The Control of Hazardous Energy (Lock-out/Tag-out) – 1910.147
- Scope, application, and purpose
- Energy control procedure
- Lock-out/tag-out devices
- Periodic inspection

Who Should Attend?

Individuals who access energized and de-energized electrical equipment

Difficulty Level Beginner

Prerequisites

Working knowledge of electricity

Electrical Safety Awareness

SAF-SFT101

1 Day

Course Purpose

The purpose of this course is to provide students with hazard awareness and electrical safety training as required by OSHA and 2012 NFPA 70E®. The main objective of this program is to increase employee awareness of electric shock, Arc Flash, and Arc Blast hazards along with bringing your training program into compliance with OSHA and NFPA 70E mandated electrical training and accident avoidance. This course will present the following major topics: NFPA 70E; identifying electrical safety hazards and planning protective schemes and techniques to address each hazard; knowledge of safety requirements employers are legally required to provide; calculating flash protection boundary; recognizing the steps needed to work safely on or near live parts; analyzing work tasks and selecting the appropriate personal protective equipment (PPE); determining the hazard risk category classification of a given task.

Course Objectives

After completing this course, students will understand the following topics:

- Safety-related work practices
- Safety-related maintenance requirements
- Safety requirements for special equipment
- Installation safety requirements
- Arc flash ruling and hazard
- Protecting the electrical worker
- Operational voltage
- Applicable standards
- Arc flash hazard boundary terms
- Arc flash calculations review
- PPE selections

Who Should Attend?

Individuals who work on or near energized and de-energized electrical equipment

Difficulty Level Beginner

Prerequisites

Working knowledge of electricity

NFPA 70E® 2012 – Arc Flash Awareness

SAF-SFT106

1 Day

Course Purpose

The purpose of this course is to provide the student with an overall understanding of the current requirements of 2012 NFPA 70E. A complete review of the standard will be provided, along with a review of the calculation methods and tables used in the standard for establishing arc flash boundary and proper personal protective equipment (PPE). This course will present review of NFPA 70E, calculating flash protection boundary, NFPA 70E Standards on PPE, and safe electrical practices.

Course Objectives

After completing this course, students will understand the following topics:

- Safety-related work practices
- Arc flash ruling and hazard
- Arc flash calculations review
- Flash hazard statistics
- Protecting the electrical worker
- Applicable standards
- Arc flash hazard boundary terms
- Operational voltage
- PPE selections (NFPA 70E)
- Overcurrent protective devices
- Arc flash considerations

Who Should Attend?

Individuals that require access to, or will be exposed to the work area designated by the flash protection boundary

Difficulty Level Beginner

Prerequisites

- Familiarity with basic electricity
- Proficiency in student's respective classification
  OR
- Enrolled in an up-grader/apprentice program

Job Aids Included

Ugly's Electrical Safety and NFPA 70E

NFPA 70E – Electrical Safety and Arc Flash Compliance

SAF-SFT112

2 Days

Course Purpose

In this course, students will gain an in-depth understanding of the current requirements of 2012 NFPA 70E. A complete presentation of the standard will be provided, along with examples and exercises covering the calculation methods and tables used in the standard for establishing arc flash boundaries and proper personal protective equipment (PPE). This course will present NFPA 70E electrical safety requirements, safe electrical practices, calculating flash protection boundary, and personal protective equipment.

Course Objectives

After completing this course, students will understand the following topics:

- Arc flash ruling and hazard
- Operational voltage
- Flash hazard statistics
- Protecting the electrical worker
- Applicable standards
- Arc flash hazard boundary terms
- Energized work permit
- Article 130 tables
- Personal protective equipment

Who Should Attend?

Individuals who:

- Are responsible for ensuring compliance with, developing training on, or supervising employees who are required to work in accordance with NFPA 70E
- Will be exposed to work areas designated by the flash protection boundary

Difficulty Level Beginner

Prerequisites

- Familiarity with basic electricity
- Proficiency in student's respective classification

OR

- Enrolled in an upgrader/apprentice program

Job Aids Included

NFPA 70E: Standard for Electrical Safety in the Workplace®, 2012 Edition

Lock-Out/Tag-Out Implementation and Arc Flash Awareness

SAF-SFT117

2 Days

Course Purpose

In this course, students will learn proper lock-out and tag-out (LOTO) procedures with electrical hazard awareness safety training as required by OSHA and NFPA 70E. The main objective of this program is to increase employee awareness of proper LOTO procedures, electric shock, arc flash, and arc blast hazards and to bring training programs into compliance with OSHA and NFPA 70E mandated electrical training and accident avoidance. This course will present the following major topics: recognizing the steps needed to work safely on or near live parts, arc flash, analyzing work tasks and selecting the appropriate personal protective equipment (PPE), NFPA 70E, identifying electrical safety hazards and planning protective schemes and techniques to address each hazard, knowledge of safety requirements employers are legally required to provide, and determining the hazard risk category classification of a given task.

Course Objectives

After completing this course, students will understand the following topics:

- Arc flash ruling and hazard
- Operational voltage
- Flash hazard statistics
- Applicable standards
- Arc flash hazard boundary terms
- Arc flash hazard study and calculations review
- PPE selections (NFPA 70E)
- Overcurrent protective devices
- National OSHA regulations
- Lock-out/tag-out devices
- Periodic inspection, installation safety, and requirements for special equipment
- The Control of Hazardous Energy (Lock-out/Tag-out) – 1910.147
- Safety-related wor practices and maintenance requirements

Who Should Attend?

Individuals who work on or near energized and de-energized electrical equipment

Difficulty Level Beginner

Prerequisites

Working knowledge of electricity

Job Aids Included

NFPA 70E: Standard for Electrical Safety in the Workplace®, 2012 Edition

Plant Floor Arc Flash/LOTO/Confined Space Safety

SAF-SFT123

4 Days

Course Purpose

This course teaches students about the three significant safety areas most important to manufacturing applications and employee safety: lock-out/tag-out implementation, confined space awareness, and arc flash awareness. Students will learn proper lock-out and tag-out procedures using the OSHA Regulations (Standards - 29 CFR). Students will also learn proper procedures for making entry into Permit Required Confined Spaces. Students will become familiar with CFR 1910.146 and how to properly employ the permit program. Students will also gain an in-depth understanding of the current requirements for electrical safety and arc flash hazard awareness using the NFPA 70E. A complete presentation of the standard will be provided. Students will learn how to establish arc flash boundaries and how to select proper personal protective equipment (PPE).

Course Objectives

After completing this course, students will understand the following topics:

- National OSHA regulations (Standards – 29 CFR)
- The Control of Hazardous Energy (Lock-out/Tag-out) – 1910.147
- Confined space awareness and identification
- Arc flash ruling, consideration, hazard, and calculations (NFPA 70E)
- Flash hazard statistics
- Protecting the electrical worker
- Arc flash hazard boundary terms
- Energized work permit
- Personal protective equipment and calculations
- Overcurrent protective devices

Who Should Attend?

Individuals who are responsible for ensuring compliance with, developing training on, or supervising employees who are required to access or be exposed to energized and de-energized electrical equipment, confined spaces, and, in accordance with NFPA 70E, work in areas designated by the flash protection boundary

Difficulty Level Beginner

Prerequisites

- Working knowledge of electricity
- Proficiency in student's respective classification

OR

- Enrolled in an up-grader/apprentice program

Job Aids Included

NFPA 70E: Standard for Electrical Safety in the Workplace®, 2009 Edition

2011 National Electrical Code (NEC®) Change Awareness

SAF-SFT12011

3 Days

Course Purpose

This course builds on a student's working knowledge of the National Electrical Code and provides a detailed description of the 2011 NEC changes.

Course Objectives

After completing this course, students will understand the following topics:

- General, Articles 100
- Wiring Design and Protection, Articles 200
- Wiring Methods and Materials, Articles 300
- Equipment for General Use, Articles 400
- Special Occupancies, Articles 500
- Special Equipment, Articles 600
- Special Conditions, Articles 700
- Communications Systems, Articles 800

Who Should Attend?

Individuals who are experienced electricians, electrical engineers, electrical contractors/builders, and maintenance/electrical supervisors that need to be trained on the 2011 National Electrical Code

Difficulty Level Intermediate

Prerequisites

- Familiarity with fundamentals of electricity
- A working knowledge of NEC
- Proficiency in student's respective classification

OR

- Enrolled in an up-grader/apprentice program

Job Aids Included

- 2011 NEC Handbook
- 2011 NEC Code Changes textbook

Industrial Electrical Controls Fundamentals

MFG213

4 Days

Course Purpose

This course provides students with the knowledge and skills required to install, maintain and troubleshoot relays, motor starters, solenoids and other electromechanical devices used for machine control. At the completion of this course, sututdents will be able to define the safety considerations that must be observed when installing, checking, or locking out electrical equipment; define uses and functions of input and output devices, relays, and motors; define an open and short condition and perform voltage and current measurements; demonstrate the proper use of the following test equipment in lab to measure voltage, current, resistance and continuity: VOM, DVM, Multi-meters, continuity tester, and amp probe; identify the proper wiring configurations of a control transformer's primary current for 240V and 480V operation; and approximate a transformer's maximum primary current for 480V operation, using the nameplate information.

Course Objectives

After completing this course, students will understand the following topics:

- Electrical fundamentals, safety, and distribution
- Input and output devices
- Logic devices
- Disconnect devices
- Contactors
- Schematic, logic and ladder diagrams
- Multimeter use
- Grounded and ungrounded control circuits
- Circuit troubleshooting
- Basic machine control systems and build circuits

Who Should Attend?

Individuals who are responsible for installing, maintaining, and troubleshooting of electromechanical machine controls

Difficulty Level Beginner

Prerequisites

Familiarity with basic electricity

Basics of Electricity

MFG244

1 Day

Course Purpose

This course provides students with basic electricity knowledge. Basic electricity theory is explored identifying component operations in energized and de-energized states. Students will learn safety fundamentals and safe operation awareness.

Course Objectives

After completing this course, students will understand the following topics:

- Fundamental electrical concepts and terms
- Sources of electricity
- Various wiring devices
- Input devices, sensors and switches
- Output devices
- Multimeter use
- Arc flash hazards
- Government regulations (OSHA and NEC)
- Personal protective equipment

Who Should Attend?

Individuals who need to know basic electricity theory

Difficulty Level Beginner

Prerequisites

There are no prerequisites for this course.

Industrial Air Controls (Pneumatic) Fundamentals

MFG202

3 Days

Course Purpose

This course provides the knowledge and skills required during the installation, maintenance and troubleshooting of pneumatic machine controls. Students will learn to demonstrate good safety procedures when working with pneumatic and air controls and how to determine potential pneumatic hazards. Students will also be able to explain the basics of pneumatic components, functions, and symbols and use pneumatic trainers to safely connect, operate, analyze, and troubleshoot sample circuits.

Course Objectives

After completing this course, students will understand the following topics:

- Pneumatic safety, terms, and transmission of energy
- Physical vs. chemical state change
- Physical states of matter
- Pressure fundamentals
- Constituents of air
- Compressibility
- Common types of compressors
- Schematic symbols
- Cylinder control valves and pneumatic fittings
- Gases vs liquids and gas laws and concepts
- Pressure scales, pressure ranges, measuring atmospheric pressure, and pressure at various altitudes
- HG/PSI conversions
- Gauge operation, reading, and vacuum gauges

Who Should Attend?

Individuals who are maintenance engineers, supervisors, or other personnel responsible for operation of pneumatic machine controls

Difficulty Level Beginner

Prerequisites

There are no prerequisites for this course.

Industrial Fluid Power Fundamentals

MFG214

5 Days

Course Purpose

This course provides students with the basics of pneumatically and hydraulically operated devices and systems found in modern industrial machinery and automation. At the completion of this course, students will be able to match the pneumatic and hydraulic components name with its ANSI symbol, understand types and uses of hydraulic fluids, identify significance of the presence or absence of foam on the surface of hydraulic fluid in the reservoir, and identify precautions during removal and replacement of hydraulic components. Students will also be able to identify low control values, bypass, meter-in or meter-out flow control and location of filters, identify long-term symptoms associated with a lack of preventive maintenance of filters, heat exchangers, reservoirs and seals, and demonstrate good safety practices when working with pneumatic and hydraulic equipment.

Course Objectives

After completing this course, students will understand the following topics:

- Physical world of a machine and states of matter
- Energy transmission using hydaulics and pneumatics
- Hydaulic and pneumatic safety
- ANSI symbols
- Control of hydaulic and pneumatic energy
- Pumps and compressors
- Air preparation
- Fluid conditioning
- Check valves, cylinders, and motors
- Directional and flow control valves
- Fluid conductors and connectors
- Simple pressure control valves

Who Should Attend?

Individuals involved with pneumatic and hydraulic applications in the workplace

Difficulty Level Beginner

Prerequisites

- Working knowledge of mathematics
- Basic familiarity with automated equipment

Industrial Hydraulic Equipment Troubleshooting

MFG236

4 Days

Course Purpose

This course provides the knowledge and skills required to supervise the installation, maintenance and troubleshooting of hydraulic systems. At the completion of this course, students will be able to: demonstrate best practice safety procedures when working with hydraulic systems; identify potential hydraulic hazards; match a given hydraulic component's name with the ANSI symbol and describe its function; describe the lockout procedure; discuss types and uses of hydraulic fluids; use a hydraulic trainer to connect, operate, analyze, and troubleshoot the operation of sample circuits; and identify proper name and function of all hydraulic components, circuit action of failing components and indicators or manual valve operators that could be used to isolate failed components.

Course Objectives

After completing this course, students will understand the following topics:

- Safety practices
- Introduction to hydraulics
- Interpreting ANSI symbols
- Pascal's law
- Applying pressure & force
- Fluid flow
- Accumulators, hydraulic pumps, actuators, variables, and power transmission
- Pressure constraints and controls
- Conductors, sealers, reservoirs, and valves
- Types of flow control and flow control methods
- Counterbalance and sequence circuit

Who Should Attend?

Individuals who are responsible for operation of hydraulically maintained and operated devices

Difficulty Level Beginner

Prerequisites

- Working knowledge of basic shop mathematics
- Familiarity with industrial equipment

Machine Functional Safety and ISO 13849 System Design: Risk Assessment

Virtual Classroom

AUTHORIZED IACET PROVIDER

International Association for Continuing Education and Training

VC-MFSISO-01

120-Minute Session

CEUs 0.2

Course Purpose

This course teaches students to use a structured risk assessment process based on ISO 13849. Students will learn how to identify the hazards of a machine, estimate the level of risk, and choose risk reduction techniques. During the exercises, students will make your decisions using the terms and rating system from ISO 13849. As students work through the process, they will build documentation that they can use throughout the lifecycle of your machines.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Define the scope of the risk assessment
- Identify the hazards
- Determine the risk level of each hazard
- Identify potential risk reduction techniques
- Choose risk reduction techniques
- Write a risk assessment report

Who Should Attend?

Design engineers, maintenance managers, or people in health and safety roles

Difficulty Level Intermediate

Prerequisites

- A computer and phone
- Experience with the design, development, maintenance, or supervision of industrial automation systems is required.

Arc Flash Awareness

Virtual Classroom

AUTHORIZED IACET PROVIDER
International Association for Continuing Education and Training

VC-SFT106

(4) 90-Minute Sessions

CEUs 0.6

Course Purpose

This course will teach students to assess arc flash hazards and act to mitigate them by selecting appropriate PPE and determining protection boundaries. You will also learn how to use NFPA 70E 2012 and calculation methods to determine protection boundaries. This course also provides some of the key requirements necessary to become a "qualified" person as defined in OSHA 1910.269, 332, 333, and NFPA 70E, such as: determining minimum approach distances; being capable of using special precautionary techniques, PPE, insulating and shielding materials, and insulated tools; receiving safety training to recognize and avoid hazards.

Course Objectives

After completing this course, students will be able to perform the following tasks:

- Determine appropriate PPE
- Determine thermal and shock boundaries
- Perform bolted fault arc flash calculations
- Perform arc fault/arc flash calculations

Who Should Attend?

Individuals required to work in accordance with NFPA 70E or who will be exposed to work areas designated by a flash protection boundary

Difficulty Level Intermediate

Prerequisites

- Experience distinguishing exposed live parts from other parts of electrical equipment
- Determining nominal system voltage of exposed live parts
- Skills and knowledge related to the construction and operation of electrical equipment and installations

Bring Training to Your Organization

Try On-Site Training Services!

Rockwell Automation on-site training can work in a typical classroom environment or on the plant floor.

Receive these benefits with standard, on-site training:

- **Flexible location** - At your facility, in your training center, or at distributor location.
- **Flexible schedule** - Any date, time, or shift that works best for your employees.
- **Free pre- and posttests** that measure your employees' knowledge gain and demonstrate the value of Rockwell Automation training solutions.
- **Dedicated instructor** emphasizing hands-on, job-related training relevant to your employees' needs.
- **Training content** adjusted according to employee skill levels.
- **Training cost savings** - No travel expenses.
- **Standard training** - Employees attend the same training delivered in an open-enrollment class and learn the same information.

To start your on-site training program, call 440-646-3434 (option 4) or contact your local Rockwell Automation sales office or Allen-Bradley distributor.

Personal Trainer

Create automation expertise with one-on-one training

This highly-focused, on-the-job training lays the foundation for successful skill and knowledge transfer. Use the Personal Trainer to provide in-depth technical experience or to mentor newly hired employees.

The Personal Trainer is an experienced Rockwell Automation instructor and technical expert who develops and implements an individualized training plan for one to two individuals on-site at your facility. The Personal Trainer mentors the individual(s) throughout the hands-on experience to improve skills and knowledge.

Training Deliverables

- A dedicated on-site instructor for one-on-one or two-on-one training for a pre-determined time period
- Training materials to facilitate learning and knowledge transfer
- Hands-on activity and experience performing job tasks with installed equipment
- Identification and implementation of best practices including troubleshooting and/or programming techniques that use critical-thinking skills and job aids
- Improved confidence in job skills as a result of the training occurring in the real-world environment

For more information

Contact your local authorized Allen-Bradley distributor, Rockwell Automation sales office, or call 440-646-3434 (option 4).

Catalog #: PTRAINER

Benefits

- Access to an automation expert
- Job-relevant training adjusted according to the individual's needs and skill levels
- Documented best practices to minimize production errors
- Increased employee competency through extensive training, hands-on practice and experience with your installed equipment, systems and applications
- Reduced training expenses associated with off-site training
- Flexible schedule – daily and weekly options available

Automation Expertise

Software/Hardware
- Installation and configuration
- "Quick Start" assistance
- Communication setup
- Reporting

Integrated Architecture
- Integration
- Communication setup
- Programming languages and power programming techniques

Legacy Products
- Migration paths
- Configuration
- Communications

Application
- Various uses and integration of Rockwell Automation products
- Conversions

Instructor-Led Training

Bring Expert Instructors to Your Location with Rockwell Automation On-Site Training!

Training cost can quickly rise when one or more individuals are sent to a remote location to attend a training course. It is often tempting to allow employees to learn through trial and error, but this is also a waste of time and money. A simple solution to such a logistical problem is the Rockwell Automation on-site training services.

On-site training can work in a typical classroom environment or one-on-one on the plant floor. Certain factors will dictate whether classroom or individual training is best, such as the number of students, current skill levels, and desired skill levels.

You Choose . . .

- Flexibility
- Shift schedules
- Training time frames
- Days of the week
- Class size
- Content
- Standard
- Tailored
- Custom
- Location
- Your classroom
- On the plant floor
- Other site

Contact your local Rockwell Automation sales office or Allen-Bradley distributor, 440-646-3434 (option 4) to initiate a discussion about our on-site training courses.

Standard, on-site training courses provide these benefits:

- Flexible location – at your facility, in your training center, on the plant floor
- Flexible schedule (any date, time, or shift) that works best for your employees
- **Free!** pre-and posttests that measure your students' knowledge gain and demonstrate the value of Rockwell Automation training solutions
- Dedicated instructor emphasizing hands-on, job related training relevent to your employees' skill and knowledge needs, as well as your requirements
- Adjustment of training content based on students' prerequisite and current skill levels
- Overall training cost-savings – eliminate expenses associated with employees traveling to off-site training
- Consistent instruction – employees attend the same training delivered in an open-enrollment class and learn the same information from the same instructor

Personal Trainer

Our Rockwell Automation instructor can help you create automation expertise with one-on-one training. The Personal Trainer is an experienced instructor and technical expert who develops and implements an individualized training plan for one to two individuals on-site at your facility. The Personal Trainer can provide in-depth technical experience or help mentor newly hired empolyees.

Custom On-Site Training

Rockwell Automation provides custom on-site, classroom training to meet your industry, application, and system-level training needs. This type of instructor-led instruction is available for companies who want to ensure their employees are highly skilled in certain applications or systems, or within certain industries. The training content focuses not only on the Rockwell Automation technology but the integration of the technology in your specific

Computer-Based Training

Computer-Based Training Curriculum Map

Networks

EtherNet/IP Bundle
9393-RSTENETAENE / 9393-RSTENETAENF

- RSTrainer for EtherNet/IP - Hardware and IP Addressing — 9393-RSTENET1ENE, 9393-RSTENET1ENF
- RSTrainer for EtherNet/IP - Communications and Diagnostics — 9393-RSTENET2ENE, 9393-RSTENET2ENF

- RSTrainer for RSLinx Software — 9393-RSTLINX, 9393-RSTLINXENF

Visualization

- RSTrainer for FactoryTalk View Machine Edition - Applications and Displays — 9393-RSTVMEPT1, 9393-RSTMEPT1ENF
- RSTrainer for FactoryTalk View Machine Edition - Drawing Objects — 9393-RSTVMEPT2, 9393-RSTMEPT2ENF

ControlLogix/RSLogix 5000

- RSTrainer for ControlLogix Fundamentals — 9393-RSTCLX, 9393-RSTCLXENF
- RSTrainer for RSLogix 5000 Software - Project Configuration — 9393-RSTLX5KPRJ, 9393-RSTLKPRJENF
- RSTrainer for RSLogix 5000 Software - Offline Programming — 9393-RSTLX5KOFF, 9393-RSTLKOFFENF

PLC/RSLogix 5

- RSTrainer for RSLogix 5 Software — 9393-RSTLX5, 9393-RSTLX5ENF

SLC/RSLogix 500

SLC 500 Fundamentals Bundle
9393-RSTSLCALENE / 9393-RSTSLCALENF

- RSTrainer for SLC 500 - Hardware Fundamentals — 9393-RSTSLCHENE, 9393-RSTSLCHENF
- RSTrainer for SLC 500 - Programming Fundamentals — 9393-RSTSLCPENE, 9393-RSTSLCPENF

- Spanish RSTrainer for RSLogix 500 Software - Offline Programming — 9393-RST5000FESE, 9393-RST5000FESF
- RSTrainer for RSLogix 500 Software - Offline Programming — 9393-RST5000FENE, 9393-RST5000FENF

Other

- Modular Programming for Machine Applications — 9393-MODPROG
- RSTrainer for Hydraulics — 9393-RSTHYD, 9393-RSTHYDENF

Available Separately or as a Bundle | Computer-Based Training | RSTrainer Enterprise Edition | Self-Study Training Kit

RSTrainer for FactoryTalk View Machine Edition - Interactive Objects
9393-RSTVMEPT3
9393-RSTMEPT3ENF

FactoryTalk View Machine Edition- Bundle
9393-RSTVMEALL / 9393-RSTMEALLENF

RSTrainer for RSLogix 5000 Software - Online Monitoring
9393-RSTLX5KON
9393-RSTLKONENF

RSLogix 5000 Software Bundle
9393-RSTL5KENE / 9393-RSTL5KENF

RSTrainer for RSLogix 5000 Software - Motion
9393-RSTLX5KMOT
9393-RSTLKMOTENF

RSTrainer for RSLogix 500 Software - Online Monitoring
9393-RST500ONENE
9393-RST500ONENF

RSTrainer for RSLogix 500 Software - Documenting and Searching
9393-RST500DSENE
9393-RST500DSENF

SLC 500 Fundamentals Bundle
9393-RSTSLCALENE / 9393-RSTSLCALENF

RSCompanion for SLC 500 and MicroLogix Processors
9393-RSCOMP500

RSTrainer Enterprise Edition for Student Manager
9393-RSTSMGRENF

RSTrainer® for EtherNet/IP - Hardware and IP Addressing

9393-RSTENET1ENE
9393-RSTENET1ENF*

5 Hours

Course Purpose

This computer-based training course covers the fundamentals of Ethernet Industrial Protocol (EtherNet/IP) hardware and IP addressing. During this course, students will learn how to design and optimize an EtherNet/IP network and configure an EtherNet/IP driver and IP addresses for EtherNet/IP devices. Helpful animations, background information, answers to frequently asked questions, and links to other reference materials provide students with a variety of knowledge and learning tools.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following tasks:

- Design EtherNet/IP networks
- Optimize and configure communications drivers using RSLinx
- Ping an IP address
- Configure and modify addresses using BOOTP-DHCP server software
- Configure and modify addresses using RSLogix 5000 software

Intended Audience

Individuals who:

- Are responsible for designing EtherNet/IP networks
- Are interested in optimizing EtherNet/IP networks, configuring communications, and configuring EtherNet/IP addresses

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft® Windows® environment

Related Job Aids Available for Purchase	Catalog #
EtherNet/IP Procedures Guide	ABT-N300-TSJ50
EtherNet/IP Documentation Reference Guide CD	ABT-N300-DRG70

*** RSTrainer Enterprise Edition product**

RSTrainer for EtherNet/IP – Communications and Diagnostics

9393-RSTENET2ENE
9393-RSTENET2ENF*

5 Hours

Course Purpose

This computer-based training course explains the concepts of Ethernet Industrial Protocol (EtherNet/IP) communications and diagnostics. During this course, students will learn how to establish EtherNet/IP connections, send messages, and perform basic networking diagnostics. Helpful animations, background information, answers to frequently asked questions, and links to other reference materials provide students with a variety of knowledge and learning tools.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following tasks:

- Configure an Ethernet/IP module in a local and remote chassis
- Configure a digital and analog I/O module
- Modify parameters
- Add a controller
- Produce and consume data
- Communicate between multiple controllers
- Access diagnostic information
- Configure the 9300-8EDM Ethernet diagnostic module

Intended Audience

Individuals who:

- Are responsible for setting up communications over an EtherNet/IP network
- Are interested in understanding how to send messages over an EtherNet/IP network, and perform basic networking diagnostics

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
EtherNet/IP Procedures Guide	ABT-N300-TSJ50
EtherNet/IP Documentation Reference Guide CD	ABT-N300-DRG70

*** RSTrainer Enterprise Edition product**

RSTrainer for FactoryTalk® View Machine Edition (ME) – Applications and Displays

9393-RSTVMEPT1
9393-RSTMEPT1ENF*

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to create and configure a human-machine interface (HMI) application. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach FactoryTalk View Machine Edition (ME). Students will learn how to create displays and tags, configure application settings, and import and export tags through step-by-step demonstrations. Students will also learn about the various settings and options in the software and see how to perform the required tasks for example FactoryTalk View ME applications.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following tasks:

- Use the application explorer
- Create a new display
- Use the startup editor
- Use project settings
- Configure security options
- Use direct-reference tags
- Create new HMI tags
- Use HMI tags
- Import and export the tag database

Intended Audience

Individuals responsible for designing FactoryTalk View ME displays

Difficulty Level Intermediate

Related Job Aids Available for Purchase	Catalog #
FactoryTalk View ME and PanelView Plus Procedures Guide	ABT-2711P-TSJ50

Prerequisites

Experience operating a computer within a Microsoft Windows environment

*** RSTrainer Enterprise Edition product**

RSTrainer for FactoryTalk View Machine Edition (ME) – Drawing Objects

9393-RSTVMEPT2
9393-RSTMEPT2ENF*

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to effectively add and animate basic drawing objects for graphic displays. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach FactoryTalk View ME. Students will learn how to add objects from the graphics library, arrange objects, and animate objects through step-by-step demonstrations. Students will learn about the various settings and options in the software and see how to perform the required tasks for example FactoryTalk View ME applications.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following tasks:

- Understand drawing objects
- Understand object properties
- Arrange objects
- Add objects from the graphic library
- Use the object explorer
- Animate drawing objects

Intended Audience

Individuals responsible for designing FactoryTalk View ME applications

Difficulty Level Intermediate

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
FactoryTalk View ME and PanelView Plus Procedures Guide	ABT-2711P-TSJ50

*** RSTrainer Enterprise Edition product**

RSTrainer for FactoryTalk View Machine Edition (ME) – Interactive Objects

9393-RSTVMEPT3
9393-RSTMEPT3ENF*

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to effectively create and configure interactive objects for graphic displays. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach FactoryTalk View ME. Students will learn how to create and configure interactive objects, parameter files, and tag placeholders through step-by-step demonstrations. Students will also learn about the various settings and options in the software and see how to perform the required tasks for example FactoryTalk View ME applications.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following tasks:

- Create push buttons
- Create display objects
- Create control list selectors, gauges, and graph objects
- Create display navigation objects
- Create local message displays
- Add advanced features to interactive objects
- Create parameter files and tag placeholders
- Test displays and applications

Intended Audience

Individuals responsible for designing FactoryTalk View ME applications

Difficulty Level Intermediate

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
FactoryTalk View ME and PanelView Plus Procedures Guide	ABT-2711P-TSJ50

*** RSTrainer Enterprise Edition product**

RSTrainer for ControlLogix® Fundamentals

9393-RSTCLX
9393-RSTCLXENF*

20 Hours

Course Purpose

This computer-based training course provides students with an introduction to the ControlLogix control system. This course is designed to provide students with the essential introductory information required when working with a ControlLogix control system. This course includes an overview of the Logix5550, Logix5555, and Logix5563 controllers, I/O modules, communications modules, and motion modules. Students will learn how to navigate through RSLogix 5000 software and learn about the four RSLogix 5000 programming languages. Through demonstrations, students will also learn about the various settings and options in the software and see how to perform the required tasks for example control applications.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following topics:

- ControlLogix hardware
- RSLogix 5000 software overview
- Module configuration (connections, module configuration)
- Tag structures (digital, analog, DeviceNet, DH/RIO)
- Programming (languages, project file, numbering systems)

Intended Audience

Individuals who need to identify, maintain, and configure ControlLogix hardware

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
Logix5000 System Glossary	ABT-1756-TSG10
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

*** RSTrainer Enterprise Edition product**

RSTrainer for RSLogix™ 5000 Software – Project Configuration

9393-RSTLX5KPRJ
9393-RSTLKPRJENF*

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to effectively create and configure automation control projects. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach RSLogix 5000 software. Students will learn how to install and navigate through the software, create and configure a new project, and produce and consume tags through step-by-step demonstrations. Students will also learn about the various settings and options in the software and see how to perform the required tasks for example automation control applications.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following tasks:

- Install RSLogix 5000 software
- Configure the display
- Navigate through the software
- Create and manage project files
- Configure a controller
- Organize tasks, programs, and routines
- Configure a local I/O module
- Produce and consume tags
- Export and import tags

Intended Audience

Individuals interested in the features and capabilities of RSLogix 5000 software

Difficulty Level Intermediate

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
Logix5000 System Glossary	ABT-1756-TSG10
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

*** RSTrainer Enterprise Edition product**

RSTrainer for RSLogix 5000 Software – Offline Programming

9393-RSTLX5KOFF
9393-RSTLKOFFENF*

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to effectively create and configure automation control projects. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach RSLogix 5000 software. Students will learn how to install and navigate through the software, create and configure a new project, and produce and consume tags through step-by-step demonstrations. Through the demonstrations, students will also learn about the various settings and options in the software and see how to perform the required tasks for example automation control applications.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following tasks:

- Enter and edit ladder logic elements
- Configure ladder logic display options
- Enter and edit function block diagrams
- Configure function block diagram display options
- Enter and edit structured text
- Configure the structured text display
- Verify project components
- Search and replace text

Intended Audience

Individuals interested in the features and capabilities of RSLogix 5000 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSTrainer for RSLogix 5000 Software – Project Configuration* (9393-RSTLX5KPRJ/9393-RSTLKPRJENF) e-Learning training course or equivalent experience with RSLogix 5000 software is recommended.

Related Job Aids Available for Purchase	Catalog #
Logix5000 System Glossary	ABT-1756-TSG10
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSG50
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

*** RSTrainer Enterprise Edition product**

RSTrainer for RSLogix 5000 Software – Online Monitoring

9393-RSTLX5KON
9393-RSTLKONENF*

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to effectively monitor and edit industrial control projects. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach RSLogix 5000 software. Students will learn how to establish communications, monitor the status of a project, program ladder logic online, and identify and correct faults through step-by-step demonstrations. Students will also learn about the various settings and options in the software and see how to perform the required tasks for example automation control applications.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following tasks:

- Establish communications
- Monitor status
- Print a ladder logic routine
- Identify and correct faults
- Program ladder logic online
- Print a function block diagram

Related Job Aids Available for Purchase	Catalog #
Logix5000 System Glossary	ABT-1756-TSG10
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50
ControlLogix 1756-L7x & -L6x Troubleshooting Guide	ABT-1756-TSJ20
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

Intended Audience

Individuals interested in the features and capabilities of RSLogix 5000 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the following e-Learning training courses or equivalent experience with RSLogix 5000 software is recommended:
  - *RSTrainer for RSLogix 5000 Software – Project Configuration* (9393-RSTLX5KPRJ/9393-RSTLKPRJENF)
  - *RSTrainer for RSLogix 5000 Software – Offline Programming* (9393-RSTLX5KOFF/9393-RSTLKOFFENF)

*** RSTrainer Enterprise Edition product**

RSTrainer for RSLogix 5000 Software – Motion

9393-RSTLX5KMOT
9393-RSTLKMOTENF*

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to effectively program motion control applications. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach RSLogix 5000 software. Students will learn how to configure servo modules, program motion instructions, and test and tune axes through step-by-step demonstrations. Students will also learn about the various settings and options in the software and see how to perform the required tasks for example motion applications.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following tasks:

- Configure the servo modules
- Configure the controller
- Add and configure a SERCOS servo drive axis
- Add and configure an analog servo drive axis
- Understand the motion instruction tag structure
- Compare immediate and synchronous instructions
- Test and tune an axis
- Use motion direct commands

Related Job Aids Available for Purchase	Catalog #
Logix5000 System Glossary	ABT-1756-TSG10
RSLogix 5000 and Logix5000 Motion Control Procedures Guide	ABT-1756-TSJ52

Intended Audience

Individuals interested in the features and capabilities of RSLogix 5000 motion control software

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the following e-Learning training courses or equivalent experience with RSLogix 5000 software is recommended:
  - *RSTrainer for RSLogix 5000 Software – Project Configuration* (9393-RSTLX5KPRJ/9393-RSTLKPRJENF)
  - *RSTrainer for RSLogix 5000 Software – Offline Programming* (9393-RSTLX5KOFF/9393-RSTLKOFFENF)
  - *RSTrainer for RSLogix 5000 Software – Online Monitoring* (9393-RSTLX5KON/9393-RSTLKONENF)

*** RSTrainer Enterprise Edition product**

RSTrainer for RSLogix 5 Software

9393-RSTLX5
9393-RSTLX5ENF*

20 Hours

Course Purpose
This computer-based training course covers the core tasks required for programming an RSLogix 5 project. This course provides information on how to install, configure, and navigate through RSLogix 5 software. Students will learn how to transfer an RSLogix 5 project from a computer to the processor, document ladder logic, and monitor data. Students will also learn about the various settings and options in the software.

Course Objectives
After completing this computer-based training course, students will be knowledgeable about the following topics:
- RSLogix 5 software installation
- Screen layout, navigation, and help
- Offline programming (new project, ladder logic editing, database documentation, reports, backup utilities)
- Online programming (communications, diagnostics)

Intended Audience
Individuals who need to use RSLogix 5 software to program, document, and troubleshoot a PLC-5 application

Difficulty Level Intermediate

Prerequisites
Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
RSLogix 5 and PLC-5 Procedures Guide	ABT-1785-TSJ53
PLC-5 and RSLogix 5 Troubleshooting Guide	ABT-1785-TSJ22
PLC 5 Documentation Reference Guide CD	ABT-1785-DRG70

*** RSTrainer Enterprise Edition product**

RSTrainer for SLC™ 500 - Hardware Fundamentals

9393-RSTSLCHENE
9393-RSTSLCHENF*

5 Hours

Course Purpose
This computer-based training course covers the fundamental principles behind the SLC 500 programmable controllers. This course covers the concepts, terminology, and hardware of SLC 500 programmable controllers. Students will learn about various types of SLC 500 processors, hardware components, communication options, I/O modules, and configuration through interactive simulations.

Course Objectives
After completing this computer-based training course, students will be knowledgeable about the following topics:
- SLC 500 family
- Chassis
- Power supplies
- Processors (SLC 5/01, 5/02, 5/03, 5/04, 5/05)
- Communication options
- Discrete and analog I/O modules
- Hardware configuration

Intended Audience
Individuals who are new to the SLC 500 series of programmable controllers

Difficulty Level Beginner

Prerequisites
Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

*** RSTrainer Enterprise Edition product**

RSTrainer for SLC 500 - Programming Fundamentals

9393-RSTSLCPENE
9393-RSTSLCPENF*

7 Hours

Course Purpose
This computer-based training course covers the fundamental principles behind programming the SLC 500 programmable controllers. This course covers the concepts, terminology, and basic programming of SLC 500 programmable controllers. Students will learn about memory organization, addressing, and ladder logic concepts through interactive simulations. This course also provides an overview of RSLogix 500 software. This course is available in both computer-based and web-based delivery formats.

Course Objectives
After completing this computer-based training course, students will be knowledgeable about the following topics:
- Memory organization
- Addressing (address types, indexed and indirect addressing)
- RSLogix 500 software overview
- Numbering systems
- Ladder logic programs
- Operating cycles
- Status file

Intended Audience
Individuals who are new to the SLC 500 series of programmable controllers

Difficulty Level Beginner

Prerequisites
Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

*** RSTrainer Enterprise Edition product**

RSTrainer for RSLogix 500 Software – Offline Programming (also available in Spanish)

9393-RST500OFENE
9393-RST500OFENF*

5 Hours

Course Purpose
This interactive, computer-based training course teaches the core tasks required for programming an RSLogix 500 project. Specifically, this course provides information on how to navigate through the RSLogix 500 software, create a new RSLogix 500 project, and enter ladder logic in a project. Helpful animations, background information, and links to other reference materials provide students with a variety of knowledge and learning tools. Students will also have the opportunity to practice performing software tasks through interactive simulations. This course is available in both computer-based and web-based delivery formats.

Course Objectives
After completing this computer-based training course, students will be knowledgeable about the following tasks:
- Navigate through the RSLogix 500 software
- Configure the display
- Create a new project
- Create program and data files
- Configure I/O modules in a project
- Enter ladder logic
- Copy, paste, and move rungs

Intended Audience
Individuals who:
- Are responsible for programming projects using RSLogix 500 software
- Are interested in the features and capabilities of RSLogix 500 software

Difficulty Level Intermediate

Prerequisites
Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

*** RSTrainer Enterprise Edition product**

RSTrainer for RSLogix 500 Software – Online Monitoring

9393-RST500ONENE
9393-RST500ONENF*

5 Hours

Course Purpose

This interactive, computer-based training course teaches the core tasks required for monitoring an RSLogix 500 project online. Specifically, this course provides information on how to configure RSLinx communications, go online with the SLC 500 processor, edit ladder logic online, and configure and use data monitoring tools. Helpful animations, background information, and links to other reference materials provide students with a variety of knowledge and learning tools. Students will also have the opportunity to practice performing software tasks through interactive simulations. This course is available in both computer-based and web-based delivery formats.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following tasks:

- Configure communications
- Transfer an RSLogix 500 project file
- Edit ladder logic online
- Monitor data
- Force inputs and outputs

Related Job Aids Available for Purchase	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

Intended Audience

Individuals who:

- Are responsible for monitoring RSLogix 500 projects
- Are interested in the features and capabilities of RSLogix 500 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the following e-Learning training course or equivalent experience with RSLogix 500 software is recommended:
  - *RSTrainer for RSLogix 500 Software – Offline Programming* (9393-RST5000FENE/9393-RST5000FENF)

*** RSTrainer Enterprise Edition product**

RSTrainer for RSLogix 500 Software – Documenting and Searching

9393-RST500DSENE
9393-RST500DSENF*

5 Hours

Course Purpose

This interactive, computer-based training course teaches the core tasks required for documenting and searching an RSLogix 500 project. Specifically, this course provides information on how to use RSLogix 500 backup utilities, symbols, comments, database tools, and search functions. Helpful animations, background information, and links to other reference materials provide students with a variety of knowledge and learning tools. Students will also have the opportunity to practice performing software tasks through interactive simulations. This course is available in both computer-based and web-based delivery formats.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following tasks:

- Use backup utilities
- Add symbols, address descriptions, instruction, rung comments, and page titles
- Use database tools and import/export a database
- Print reports
- Search a project

Related Job Aids Available for Purchase	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

Intended Audience

Individuals who:

- Are responsible for programming projects using RSLogix 500 software
- Are interested in the features and capabilities of RSLogix 500 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the following e-Learning training courses or equivalent experience with RSLogix 500 software is recommended:
  - *RSTrainer for RSLogix 500 Software – Offline Programming* (9393-RST5000FENE/9393-RST5000FENF)
  - *RSTrainer for RSLogix 500 Software – Online Monitoring* (9393-RST5000NENE/9393-RST5000NENF)

*** RSTrainer Enterprise Edition product**

RSCompanion for SLC 500 and MicroLogix Processors

9393-RSCOMP500

Course Purpose

RSCompanion for SLC 500 and MicroLogix processors is an interactive reference tool that can save valuable startup time. By helping users develop and document ladder logic programs and assisting with installing and commissioning hardware, RSCompanion helps users make it all work together. RSCompanion can also be used with RSLogix 500 ladder logic editing software.

Course Objectives

After completing this computer-based training course, students will have a better understanding of the following reference information:

- Processors
- Hardware
- Wizards
- Addressing
- Instructions
- Toolbox - software tools

Related Job Aids Available for Purchase	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
SLC 500 and RSLogix 500 Troubleshooting Guide	ABT-1747-TSJ22
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

Intended Audience

Individuals who:

- Need fast access to addressing and instruction set reference information to develop ladder logic programs more efficiently
- Need help with installing and commissioning SLC 500 and MicroLogix hardware

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Experience using RSLogix 500 software is helpful but not required

*** RSTrainer Enterprise Edition product**

RSTrainer for Hydraulics

9393-RSTHYD
9393-RSTHYDENF*

20 Hours

Course Purpose

This computer-based training course is designed to teach students the fundamental concepts, principles, and equipment used in hydraulic systems. Students gain knowledge about pumps, valves, actuators, and fluids that comprise hydraulic systems through detailed descriptions and animations. Problem-solving simulations and troubleshooting situations help students learn about the operation and characteristics of various types of hydraulic equipment. This course is available in both computer-based and web-based delivery formats.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following topics:

- Basic functions and principles of hydraulic systems
- Pumps (gear, vane, piston)
- Valves (pressure control, flow control, check, directional control)
- Actuators (linear, rotary, hydraulic motors)
- Fluids (fluid oil additives, conductors, and fittings)

Intended Audience

Individuals who need to know components, functions, and basic operation of hydraulic systems that include pumping, conducting, filtering, controlling, and actuating

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft Windows environment

*** RSTrainer Enterprise Edition product**

RSTrainer for RSLinx® Software

9393-RSTLINX
9393-RSTLINXENF*

20 Hours

Course Purpose
This computer-based skill-building course covers material for users who want to take full advantage of the powerful monitoring, configuration, communication, and diagnostic capabilities of RSLinx software. The skills students will learn will enable them to use RSLinx software for the acquisition of PLC data and to integrate the display, archiving, and management of critical data. Students will learn to use RSLinx software to exchange data between Rockwell Automation hardware and software products as well as Microsoft Office programs, third-party programs, or user-developed applications.

Course Objectives
After completing this computer-based training course, students will be knowledgeable about the following topics:
- Driver configuration
- Diagnostic tools and utilities (network monitoring tools, configuration tools and security, utilities: backup, restore, EDS hardware installation tools, etc.)
- Client application communications (DDE/OPC topics, Alias topics, DDE/OPC diagnostics)

Intended Audience
Individuals who:
- Have a fundamental knowledge of programmable controllers
- Are interested in RSLinx software

Difficulty Level Intermediate

Prerequisites
- Experience operating a computer within a Microsoft Windows environment
- Working knowledge of programmable controllers

* RSTrainer Enterprise Edition product

RSTrainer Enterprise Edition for Student Manager

9393-RSTSMGRENF*

Purpose
This software is a student tracking and reporting utility for use with the RSTrainer series of computer-based training courses. It provides similar functionality to a learning management system by maintaining, recording, and managing student information for the RSTrainer computer-based training courses. This advanced system maintains every student's progress, scores, and personal information in an easy-to-use interface and database system that eliminates the burden of manually documenting employee training information.

Software Capabilities
This software will allow the following information to be tracked for each student completing the RSTrainer computer-based training courses:
- Passwords and log-on information
- Account and program access
- Progress
- Scores

Intended Audience
Training professionals, managers, or supervisors who maintain several students' records and progress in a training program

Prerequisites
Experience operating a computer within a Microsoft Windows environment

Related Products
All RSTrainer series of computer-based training courses

* RSTrainer Enterprise Edition product

Modular Programming for Machine Applications

9393-MODPROG

Course Purpose

This computer-based training course provides students with the skills and knowledge to produce a software design specification for a machine or line of machines. The modular programming concepts in this course are derived from the ISA-88.01 industry standard and include the OMAC PackML state and data models as defined in the ISA-TR88.00.02 technical report. The specification will follow modular programming guidelines and describe: equipment and control modules for controlling the machine's I/O devices, procedures for supervising and coordinating the modules, data structures for interfacing procedures with modules, state model for machine's overall operation, and naming conventions for software components. By using a modular approach to software design, software becomes much easier to reuse from project to project. As the base of modular code increases, development time decreases. Additionally, the quality of the code increases because you can refine it each time you reuse it.

Course Objectives

After completing this computer-based training course, students will be knowledgeable about the following tasks:

- Introduce modular programming
- Select modes and states
- Break down states and equipment modules into steps
- Identify equipment and control modules
- Organize unit procedures
- Define interfaces for procedures and modules
- Implement modular programming tools and modular programming into RSLogix 5000 software

Intended Audience

- Control engineers who want to improve the efficiency of their software development process
- Plant engineers who need to integrate and maintain lines of machines
- Technicians and other maintenance individuals who need to interpret and maintain modular software programs

Difficulty Level Beginner

Prerequisites

- First-hand knowledge of how your machines operate
- Able to organize data into programs and routines and create user-defined data types in RSLogix 5000 software
- Able to write and program ladder diagrams in RSLogix 5000 software

Web-Based Training

Web-Based Training Curriculum Map

Automation Fundamentals

- Fundamentals of AC/DC Motors and Drives
- PLC Fundamentals

Networks

- EtherNet/IP - Hardware and IP Addressing
- EtherNet/IP - Communications and Diagnostics

Visualization

- FactoryTalk View ME Software - Applications and Displays
- FactoryTalk View ME Software - Drawing Objects
- FactoryTalk View ME Software - Interactive Objects

SLC/RSLogix 500

- SLC 500 - Hardware Fundamentals
- SLC 500 - Programming Fundamentals
- RSLogix 500 Software - Offline Programming (Available in Spanish)

ControlLogix/RSLogix 5000

- RSLogix 5000 Software - Project Configuration
- RSLogix 5000 Software - Offline Programming
- RSLogix 5000 Software - Online Monitoring

General Industrial

- Electrical Theory
- Industrial Electrical
- Industrial Safety
- Industrial Mechanical

Web-Based Training

RSLogix 500 Software - Online Monitoring

RSLogix 500 Software - Documenting and Searching

RSLogix 5000 Software - Motion

Industrial Hydraulics

Industrial Pneumatics

Available in Spanish

Mobile Hydraulics

Available in Spanish

Mobile Electrical

Fundamentals of AC/DC Motors and Drives

ePass/WBT1PACK

20 Hours

Course Purpose

This interactive, self-paced, training course is a knowledge-building course that provides students with a basic understanding of AC and DC motor and drive concepts and terminology. This course is instructionally designed to teach students the necessary fundamental knowledge and skills required to begin attending more advanced installation, maintenance, and control courses. Students will learn to recognize AC and DC drive and motor hardware and functions through example drive applications. This course is available in both computer-based and web-based delivery formats.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following tasks:

- Recognize AC and DC motor hardware
- Recognize AC and DC drive hardware
- Monitor a drive using a HIM
- Recognize line protection and filtering device hardware and functions
- Recognize AC and DC motor braking methods
- Test a drive using electrical measuring tools
- Preform pre-power and power-on checks
- Select a drive for basic applications

Intended Audience

Individuals who are unfamiliar with the control of AC and DC motors and drives

Difficulty Level Beginner

Prerequisites

- Experience operating a computer within a Microsoft® Windows® environment
- Understanding of basic electrical and electronic concepts

Related Job Aids Available for Purchase	Catalog #
AC and DC Motor and Drive Glossary	ABT-D100-TSG10

PLC Fundamentals

ePass/WBT1PACK

20 Hours

Course Purpose

This interactive, self-paced, training course delivers a broad-based understanding of important PLC principles and concepts. Students will understand how to connect to PLC hardware and how they function in various control systems. Students will also study the various programming conventions, as well as practical issues about automation controls and components.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following topics and tasks:

- What is a PLC?
- PLC hardware
- PLC numbering systems
- How is a PLC structured
- How to program a PLC
- Devices connected to a PLC
- How to use timers
- How to use counters
- Data handling instructions
- Comparison instructions
- Math instructions
- Sequencing instructions
- Specialty instructions
- Practical issues
- Resources
- Product support

Intended Audience

Individuals who need to understand the basics of programmable logic controllers

Difficulty Level Beginner

Prerequisites

There are no prerequisites for this web-based training course.

Related Job Aids Available for Purchase	Catalog #
RSLogix 5 and PLC-5 Procedures Guide	ABT-1785-TSJ53
PLC-5 Documentation Reference Guide CD	ABT-1785-DRG70

EtherNet/IP - Hardware and IP Addressing

ePass/WBT1PACK

5 Hours

Course Purpose

This interactive, self-paced training course covers the fundamentals of Ethernet Industrial Protocol (EtherNet/IP) hardware and IP addressing. During this course, students will learn how to design and optimize an EtherNet/IP network and configure an EtherNet/IP driver and IP addresses for EtherNet/IP devices. Helpful animations, background information, answers to frequently asked questions, and links to other reference materials provide students with a variety of knowledge and learning tools.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following tasks:

- Design EtherNet/IP networks
- Optimize and configure communications driver using RSLinx
- Ping an IP address
- Configure and modify addresses using BOOTP-DHCP server software
- Configure and modify addresses using RSLogix 5000 software

Intended Audience

Individuals who:

- Are responsible for designing EtherNet/IP networks
- Are interested in optimizing EtherNet/IP networks, configuring communications, and configuring EtherNet/IP addresses

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
EtherNet/IP Procedures Guide	ABT-N300-TSJ50
EtherNet/IP Documentation Reference Guide CD	ABT-N300-DRG70

EtherNet/IP – Communications and Diagnostics

ePass/WBT1PACK

5 Hours

Course Purpose

This interactive, self-paced training course teaches the concepts of Ethernet Industrial Protocol (EtherNet/IP) communications and diagnostics. During this course, students will learn how to establish EtherNet/IP connections, send messages, and perform basic networking diagnostics. Helpful animations, background information, answers to frequently asked questions, and links to other reference materials provide students with a variety of knowledge and learning tools.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following tasks:

- Configure an Ethernet/IP module in a local and remote chassis
- Configure a digital and analog I/O module
- Modify parameters
- Add a controller
- Produce and consume data
- Communicate between multiple controllers
- Access diagnostic information
- Configure the 9300-8EDM ethernet diagnostic module

Intended Audience

Individuals who:

- Are responsible for setting up communications over an EtherNet/IP network
- Are interested in understanding how to send messages over an EtherNet/IP network, and perform basic networking diagnostics

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
EtherNet/IP Procedures Guide	ABT-N300-TSJ50
EtherNet/IP Documentation Reference Guide CD	ABT-N300-DRG70

FactoryTalk® View Machine Edition – Applications and Displays

ePass/WBT1PACK

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to create and configure a human-machine interface (HMI) application. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach FactoryTalk View Machine Edition (ME) software. Students will learn how to create displays and tags, configure application settings, and import and export tags through step-by-step demonstrations. Students will also learn about the various settings and options in the software and see how to perform the required tasks for example FactoryTalk View ME applications.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following tasks:

- Use the application explorer
- Create a new display
- Use the startup editor
- Use project settings
- Configure security and language options
- Use direct-reference tags
- Create and use new HMI tags
- Import and export the tag database

Intended Audience

Individuals responsible for designing FactoryTalk View ME applications.

Difficulty Level Intermediate

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
FactoryTalk View ME & PanelView Plus Procedures Guide	ABT-2711P-TSJ50

FactoryTalk View Machine Edition – Drawing Objects

ePass/WBT1PACK

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to effectively add and animate basic drawing objects for graphic displays. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach FactoryTalk View Machine Edition (ME) software. Students will learn how to add objects from the graphics library, arrange objects, and animate objects through step-by-step demonstrations. Students will learn about the various settings and options in the software and see how to perform the required tasks for example FactoryTalk View ME applications.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following tasks:

- Understand drawing objects
- Understand object properties
- Arrange objects
- Add objects from the graphic library
- Use the object explorer
- Animate drawing objects

Intended Audience

Individuals responsible for designing FactoryTalk View ME displays

Difficulty Level Intermediate

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
FactoryTalk View ME & PanelView Plus Procedures Guide	ABT-2711P-TSJ50

FactoryTalk View Machine Edition – Interactive Objects

ePass/WBT1PACK

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to effectively create and configure interactive objects for graphic displays. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach FactoryTalk View Machine Edition (ME) software. Students will learn how to create and configure interactive objects, parameter files, and tag placeholders through step-by-step demonstrations. Students will also learn about the various settings and options in the software and see how to perform the required tasks for example FactoryTalk View ME applications.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following tasks:

- Create push buttons, and display objects
- Create control list selectors, gauges, and graph objects
- Create display navigation objects
- Create local message displays
- Add advanced features to interactive objects
- Create parameter files and tag placeholders
- Test displays and applications

Intended Audience

Individuals responsible for designing FactoryTalk View ME displays

Difficulty Level Intermediate

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
FactoryTalk View ME & PanelView Plus Procedures Guide	ABT-2711P-TSJ50

SLC™ 500 – Hardware Fundamentals

ePass/WBT1PACK

5 Hours

Course Purpose

This web-based training course covers the fundamental principles behind SLC 500 programmable controllers. This course covers the concepts, terminology, and hardware of SLC 500 programmable controllers. Students will learn about various types of SLC 500 processors, hardware components, communication options, I/O modules, and configuration through interactive simulations.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following topics:

- SLC 500 family
- Chassis
- Power supplies
- Processors (SLC 5/01, 5/02, 5/03, 5/04, 5/05)
- Communication options
- Discrete and analog I/O modules
- Hardware configuration

Intended Audience

Individuals who are new to the SLC 500 series of programmable controllers

Difficulty Level Beginner

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

SLC 500 – Programming Fundamentals

ePass/WBT1PACK

7 Hours

Course Purpose
This web-based training course covers the fundamental principles behind SLC 500 programmable controllers. This course covers the concepts, terminology, and basic programming of SLC 500 programmable controllers. Students will learn about memory organization, addressing, and ladder logic concepts through interactive simulations. This course also provides an overview of RSLogix 500 software. This course is available in both computer-based and web-based delivery formats.

Course Objectives
After completing this web-based training course, students will be knowledgeable about the following topics:
- Memory organization
- Addressing (address types, indexed and indirect addressing)
- RSLogix 500 software overview
- Numbering systems
- Ladder logic programs
- Operating cycles
- Status file

Intended Audience
Individuals who are new to the SLC 500 series of programmable controllers

Difficulty Level Beginner

Prerequisites
Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

RSLogix 500 Software – Offline Programming
(also available in Spanish)

ePass/WBT1PACK

5 Hours

Course Purpose
This interactive, self-paced, training course teaches the core tasks required for programming an RSLogix 500 project. Specifically, this course provides information on how to navigate through the RSLogix 500 software, create a new RSLogix 500 project, and enter ladder logic in a project. Helpful animations, background information, and links to other reference materials provide students with a variety of knowledge and learning tools. Students will also have the opportunity to practice performing software tasks through interactive simulations. This course is available in both computer-based and web-based delivery formats.

Course Objectives
After completing this web-based training course, students will be knowledgeable about the following tasks:
- Navigate through the RSLogix 500 software
- Configure the display
- Create a new project
- Create program and data files
- Configure I/O modules in a project
- Enter ladder logic
- Copy, paste, and move rungs

Intended Audience
Individuals who:
- Are responsible for programming projects using RSLogix 500 software
- Are interested in the features and capabilities of RSLogix 500 software

Difficulty Level Intermediate

Prerequisites
Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

RSLogix 500 Software – Online Monitoring

ePass/WBT1PACK

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required for monitoring an RSLogix 500 project online. Specifically, this course provides information on how to configure RSLinx communications, go online with the SLC 500 processor, edit ladder logic online, and configure and use data monitoring tools. Helpful animations, background information, and links to other reference materials provide students with a variety of knowledge and learning tools. Students will also have the opportunity to practice performing software tasks through interactive simulations. This course is available in both computer-based and web-based delivery formats.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following tasks:

- Configure communications
- Transfer an RSLogix 500 project file
- Edit ladder logic online
- Monitor data
- Force inputs and outputs

Related Job Aids Available for Purchase	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

Intended Audience

Individuals who:

- Are responsible for monitoring RSLogix 500 projects
- Are interested in the features and capabilities of RSLogix 500 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the following web-based training course or equivalent experience with RSLogix 500 software is recommended:
  - *RSLogix 500 Software – Offline Programming*

RSLogix 500 Software – Documenting and Searching

ePass/WBT1PACK

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required for documenting and searching an RSLogix 500 project. Specifically, this course provides information on how to use RSLogix 500 backup utilities, symbols, comments, database tools, and search functions. Helpful animations, background information, and links to other reference materials provide students with a variety of knowledge and learning tools. Students will also have the opportunity to practice performing software tasks through interactive simulations. This course is available in both computer-based and web-based delivery formats.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following tasks:

- Use backup utilities
- Add symbols and address descriptions
- Add instruction, rung comments, and page titles
- Use database tools
- Import and export a database
- Print reports
- Search a project

Related Job Aids Available for Purchase	Catalog #
RSLogix 500 and SLC 500 Procedures Guide	ABT-1747-TSJ52
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

Intended Audience

Individuals who:

- Are responsible for programming projects using RSLogix 500 software
- Are interested in the features and capabilities of RSLogix 500 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the following web-based training courses or equivalent experience with RSLogix 500 software is recommended:
  - *RSLogix 500 Software – Offline Programming*
  - *RSLogix 500 Software – Online Monitoring*

RSLogix 5000 Software – Project Configuration

ePass/WBT1PACK

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to effectively create and configure automation control projects. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach RSLogix 5000 software. Students will learn how to install and navigate through the software, create and configure a new project, and produce and consume tags through step-by-step demonstrations. Students will also learn about the various settings and options in the software and see how to perform the required tasks for example automation control applications.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following tasks:

- Install RSLogix 5000 software
- Configure the display
- Navigate through the software
- Create and manage project files
- Configure a controller
- Organize tasks, programs, and routines
- Configure a local I/O module
- Produce and consume tags
- Export and import tags

Intended Audience

Individuals interested in the features and capabilities of RSLogix 5000 software

Difficulty Level Intermediate

Prerequisites

Experience operating a computer within a Microsoft Windows environment

Related Job Aids Available for Purchase	Catalog #
Logix5000 System Glossary	ABT-1756-TSG10
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

RSLogix 5000 Software – Offline Programming

ePass/WBT1PACK

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to effectively create and configure automation control projects. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach RSLogix 5000 software. Students will learn how to install and navigate through the software, create and configure a new project, and produce and consume tags through step-by-step demonstrations. Through the demonstrations, students will also learn about the various settings and options in the software and see how to perform the required tasks for example automation control applications.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following tasks:

- Enter and edit ladder logic elements
- Configure ladder logic display options
- Enter and edit function block diagrams
- Configure function block diagram display options
- Enter and edit structured text
- Configure the structured text display
- Verify project components
- Search and replace text

Intended Audience

Individuals interested in the features and capabilities of RSLogix 5000 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the *RSLogix 5000 Software – Project Configuration* web-based training course or equivalent experience with RSLogix 5000 software is recommended

Related Job Aids Available for Purchase	Catalog #
Logix5000 System Glossary	ABT-1756-TSG10
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSG50
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

RSLogix 5000 Software – Online Monitoring

ePass/WBT1PACK

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to effectively monitor and edit industrial control projects. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach RSLogix 5000 software. Students will learn how to establish communications, monitor the status of a project, program ladder logic online, and identify and correct faults through step-by-step demonstrations. Students will also learn about the various settings and options in the software and see how to perform the required tasks for example automation control applications.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following tasks:

- Establish communications
- Monitor status
- Print a ladder logic routine
- Identify and correct faults
- Program ladder logic online
- Print a function block diagram

Related Job Aids Available for Purchase	Catalog #
Logix5000 System Glossary	ABT-1756-TSG10
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50
ControlLogix 1756-L7x & -L6x Troubleshooting Guide	ABT-1756-TSJ20
Logix5000 Documentation Reference Guide CD	ABT-1756-DRG70

Intended Audience

Individuals interested in the features and capabilities of RSLogix 5000 software

Difficulty Level Intermediate

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the following web-based training courses or equivalent experience with RSLogix 5000 software is recommended:
  - *RSLogix 5000 Software – Project Configuration*
  - *RSLogix 5000 Software – Offline Programming*

Web-Based Training

RSLogix 5000 Software – Motion

ePass/WBT1PACK

5 Hours

Course Purpose

This interactive, self-paced, training course teaches the core tasks required to effectively program motion control applications. This course is available in both computer-based and web-based delivery formats and is part of a series of e-Learning courses designed to teach RSLogix 5000 software. Students will learn how to configure servo modules, program motion instructions, and test and tune axes through step-by-step demonstrations. Students will also learn about the various settings and options in the software and see how to perform the required tasks for example motion applications.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following tasks:

- Configure the servo modules
- Configure the controller
- Add and configure a SERCOS servo drive axis
- Add and configure an analog servo drive axis
- Understand the motion instruction tag structure
- Compare immediate and synchronous instructions
- Test and tune an axis
- Use motion direct commands

Intended Audience

Individuals interested in the features and capabilities of RSLogix 5000 motion control software

Difficulty Level Advanced

Prerequisites

- Experience operating a computer within a Microsoft Windows environment
- Completion of the following web-based training courses or equivalent experience with RSLogix 5000 software is recommended:
  - *RSLogix 5000 Software – Project Configuration*
  - *RSLogix 5000 Software – Offline Programming*
  - *RSLogix 5000 Software – Online Monitoring*

Related Job Aids Available for Purchase	Catalog #
Logix5000 System Glossary	ABT-1756-TSG10
RSLogix 5000 and Logix5000 Motion Control Procedures Guide	ABT-1756-TSJ52

Electrical Theory

ePass/WBT1PACK

15 Hours

Course Purpose
This interactive, self-paced, training course begins with the basics — the atom, electrical charge, voltage, current, and more. The basics are followed by an in-depth, theoretical approach to circuit analysis, basic magnetism, magnetic induction, and single- and poly-phase AC circuits.

Course Objectives
After completing this web-based training course, students will be knowledgeable about the following topics:
- Electrical fundamentals
- Basic physics
- Circuit fundamentals
- Circuit analysis
- Basic magnetism
- Magnetic circuits
- Single-pass AC circuits
- Magnetic induction
- Poly-phase AC circuits

Intended Audience
Individuals who need to understand electrical theory systems

Difficulty Level Beginner

Prerequisites
There are no prerequisites for this web-based training course.

Industrial Electrical

ePass/WBT1PACK

5 Hours

Course Purpose
This interactive, self-paced, training course delivers a broad-based understanding of the most important electrical concepts. Students will understand basic physics laws as they apply to electricity and basic electrical circuits. Students will also study the various components of electrical systems and how they function and interact with each other.

Course Objectives
After completing this web-based training course, students will be knowledgeable about the following topics:
- Electrical fundamentals
- Circuit fundamentals
- Circuit analysis
- Basic magnetism
- Circuit components
- Electrical testers
- Schematics

Intended Audience
Individuals who need to understand basic electrical concepts

Difficulty Level Beginner

Prerequisites
There are no prerequisites for this web-based training course.

Industrial Safety

ePass/WBT1PACK

15 Hours

Course Purpose
This interactive, self-paced, training course covers the ten common safety concerns in industrial, manufacturing, and construction environments. It delivers an interactive training experience focused on safety from an employee perspective.

Course Objectives
After completing this web-based training course, students will be knowledgeable about the following topics:
- Introduction to safety
- Walking and working surfaces
- Prevention and protection plans
- Personal protective equipment
- Electrical safety
- Machine guarding
- Chemical safety
- Powered industrial trucks
- Industrial hygiene
- Ergonomics

Intended Audience
Individuals who need to understand basic industrial safety standards and procedures

Difficulty Level Beginner

Prerequisites
There are no prerequisites for this web-based training course.

Industrial Mechanical

ePass/WBT1PACK

5 Hours

Course Purpose
This interactive, self-paced, training course delivers a broad-based understanding of the most important mechanical concepts. Students will understand basic physics laws as they apply to mechanical power and the systems in which they can be used. Students will also study the various components of mechanical systems and how they function and interact with each other.

Course Objectives
After completing this web-based training course, students will be knowledgeable about the following topics:
- Basic physics
- Linear actuators
- Clutches
- Brakes
- Clutch/brake combinations
- Bearings
- Gears
- Drives
- Couplings

Intended Audience
Individuals who need to understand basic mechanical concepts

Difficulty Level Beginner

Prerequisites
There are no prerequisites for this web-based training course.

Industrial Hydraulics

ePass/WBT1PACK

5 Hours

Course Purpose

This interactive, self-paced, training course delivers a broad-based understanding of the most important hydraulic concepts. Students will understand basic physics laws as they apply to hydraulic power and the systems in which they can be used. Students will also study the various components of hydraulic systems and how they function and interact with each other. This course is available in both computer-based and web-based delivery formats.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following topics:

- Basic hydraulic physics
- Pumps
- Actuators
- Pressure control
- Directional control
- Flow control valves
- Modular control valves
- Fluid conditioning
- Check valves
- Accessory components
- Fluid conductors
- Schematics
- Basic system design

Intended Audience

Individuals who need to understand basic hydraulic concepts

Difficulty Level Beginner

Prerequisites

There are no prerequisites for this web-based training course.

Industrial Pneumatics

ePass/WBT1PACK

5 Hours

Course Purpose

This interactive, self-paced, training course delivers a broad-based understanding of the most important pneumatic concepts. Students will understand basic physics laws as they apply to pneumatics, as well as understand schematics and system design. Students will also study the various components of pneumatic systems and how they function and interact with each other.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following topics:

- Electrical physics
- Compressors
- Air dryers
- Air preparation
- Air distribution
- Actuators
- Directional control valves
- Accessories
- Air line conductors
- Vacuum
- Schematics

Intended Audience

Individuals who need to understand basic pneumatic concepts

Difficulty Level Beginner

Prerequisites

There are no prerequisites for this web-based training course.

Mobile Hydraulics (also available in Spanish)

ePass/WBT1PACK

5 Hours

Course Purpose

This course delivers an interactive training experience covering the concepts needed to understand and work with the hydraulic systems of mobile equipment. Students will learn various physics laws related to hydraulic power, as well as the hydraulic components and circuits associated with these systems. Students will study the basics of hydrostatic transmissions, as well as valves and maintenance systems common to almost all combustion engine vehicles. Students will also study the symbols and language of hydraulic schematics, helping them better understand their systems.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following topics:

- Fluid power physics
- Pumps
- Actuators
- Hydraulic transmissions
- Pressure control
- Directional control valves
- Flow control valves
- Modular control valves
- Fluid conditioning
- Check valves
- Accessory components
- Fluid conductors
- Schematics

Intended Audience

Individuals who need a better understanding of mobile hydraulics equipment

Difficulty Level Beginner

Prerequisites

There are no prerequisites for this web-based training course.

Mobile Electrical (also available in Spanish)

ePass/WBT1PACK

5 Hours

Course Purpose

This course delivers an interactive training experience to assist students in working with electrical systems of mobile equipment. Students will learn the various physics laws related to electric power, as well as the electric components and circuits associated with these systems.

Course Objectives

After completing this web-based training course, students will be knowledgeable about the following topics:

- Electrical fundamentals
- Circuit fundamentals
- Circuit analysis
- Basic magnetism
- Circuit components
- Electrical testers
- Charging and starting systems

Intended Audience

Individuals who need a better understanding of mobile electrical equipment

Difficulty Level Beginner

Prerequisites

There are no prerequisites for this web-based training course.

Job Aids

Your Training is Over. Back on the Job. Now What?

Job Aids Provide Convenient On-the-Job Performance Support

Inevitably, no matter how effective training is, as more time passes, information that's not used frequently will be forgotten. Yet, as industrial technologies continue to increase in complexity, recalling each critical piece of information becomes essential to your company's success.

We've got you covered: Rockwell Automation job aids provide on-the-job support at a glance.

Our extensive selection of job aids, including procedures guides, troubleshooting guides, and reference guides, cover a diverse range of technologies and job functions. Available in a variety of languages and complemented by a compact, easy-to-use design, job aids are ready to go to work with you for the long haul.

Procedures Guides
Procedures guides help ensure that your employees always follow best practices and perform within established guidelines. Covering the gamut of pertinent software related tasks in programming and troubleshooting, our procedures guides provide easy-to-follow, step-by-step instructions that result in more productive employees. First time, every time.

Troubleshooting Guides
Put away those cumbersome technical manuals! Rockwell Automation troubleshooting guides provide an essential "just-in-time" resource when you need it most. With quick access to product-specific, best-practice information, users can quickly navigate through a series of flow chart questions, checks, and actions to help identify equipment problems and their appropriate resolutions.

Reference Guides
Reference guides provide users the information they need, the moment they need it by organizing critical, frequently used information in a straightforward, intuitive format. Reference guides come in four different types:

- Document Reference Guides provide the most frequently used information found in a full technical manual.
- Quick Reference Guides define parameters for a specific device or system.
- Quick Reference Cards are the ultimate in portability.
- Glossaries organize and define standard terminology.

Custom Job Aids
Custom job aids from Rockwell Automation provide you with a proven source for technical documentation customized for your specific facility and application. Not only can you get a cost-effective, tailored solution covering the ins and outs of our extensive product lines, but we can cover non-Rockwell Automation equipment.

From step-by-step troubleshooting procedures, to quality-inspection sheets, recipe setup sheets and more; you'll find maintenance and systems engineers spending more time doing what they do best.

Rockwell Automation custom job aids: Your specific information when and where you need it most.

For More Information
For more information about Rockwell Automation Training Services go to www.rockwellautomation.com/training.

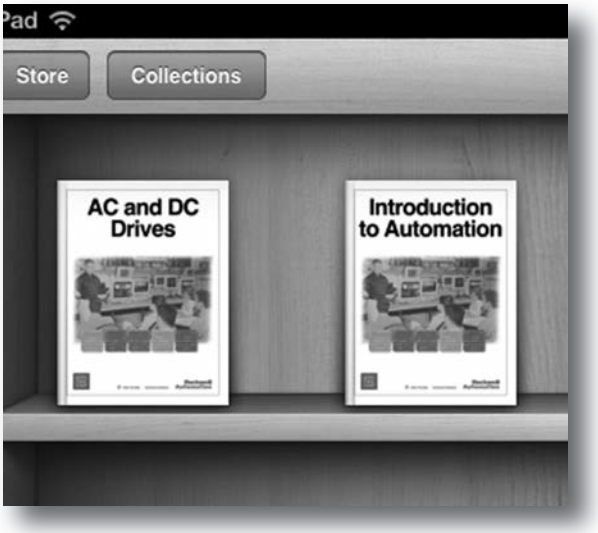
When Should You Consider Job Aids

- Employees need refresher training.
- Complex routines are not performed frequently enough to commit to memory.
- Your manufacturing environment demands straightforward access to a large knowledge base.
- Current documentation is unorganized, inaccessible, and is not circulated.
- Employees perform similar job functions, but have widely varying skills.
- Employee turnover creates need for on-the-job support.

Mobile

Rockwell Automation Interactive iBooks!

Not just a textbook but a new and exciting way to read and learn about industrial automation concepts straight from your iPad.



Rockwell Automation iBooks are highly engaging and include diverse learning activities:

- Videos/Animations - a wide variety of videos and animations to enhance concepts and provide real-world examples
- Podcasts - listen to interviews with automation workers that offer unique perspectives of various jobs and industries
- Web links - access to supplemental information instantly
- Check Knowledge – relevant questions will test your understanding of concepts

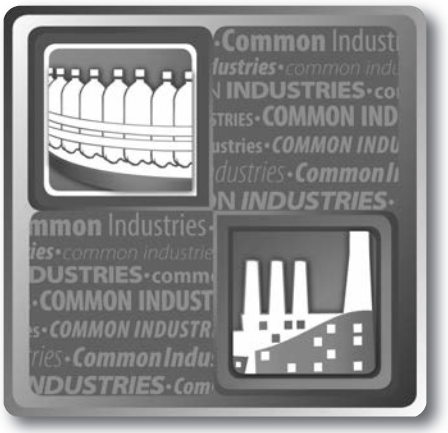
Availability
To purchase Rockwell Automation iBooks, visit the iTunes Store.

Introduction to Automation iBook

The *Introduction to Automation* iBook will provide you with a broad and fundamental understanding of industrial automation. Topics range from an overview of common automation industries to an introduction of basic automated system components, such as controllers, I/O, drives, and HMI (Human Machine Interface). In addition, you will learn common automation terminology, what tools are used with industrial automation, and what careers may be available to them within this field. The variety of learning resources integrated in this iBook will give you a solid foundation with automated systems and prepare you for more advanced automation-related topics.

Introduction to Automation Chapters:

- Identifying Common Industries and Applications in Industrial Automation
- Understanding Industrial Automation Careers
- Identifying Industrial Automation Standards and Regulations
- Understanding Basic Mechanical Components
- Understanding Automation Control Systems
- Understanding Controllers
- Identifying I/O Devices and Modules
- Understanding Networks
- Recognizing Logic
- Recognizing Basic Programming Concepts
- Identifying System Documentation
- Identifying Human Machine Interfaces
- Identifying AC and DC Motors and Drives
- Understanding Safety in Automation
- Understanding Process Control

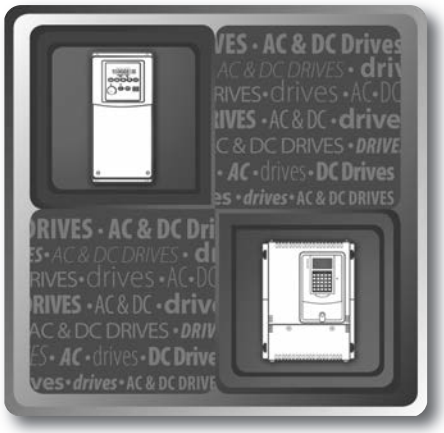


Audience
This book is intended for individuals who have little or no experience with automation systems.

AC and DC Drives iBook

The *AC and DC Drives* iBook will provide you with an understanding of AC and DC drives, including basic configuring, operating, maintaining, and troubleshooting using a HIM or HMI. You will identify basic components common to industrial drive applications. You will also learn the characteristics of AC and DC drives in various examples of real-world applications. This book includes key concepts, definitions, links to multimedia examples and more to give you an interactive learning experience.

AC and DC Drives Chapters:



- Identifying Drive System Components and Concepts
- Identifying Line Protection and Filtering Methods for AC and DC Drive Systems
- Recognizing DC Motor Functions Controlled by DC Drives
- Identifying DC Drive Hardware and Functions
- Recognizing AC Motor Functions Controlled by AC Drives
- Identifying AC Drive Hardware and Functions
- Identifying Braking Methods for AC and DC Drive Systems
- Comparing AC and DC Drive Systems for Basic Applications
- Preventing Electrostatic Damage to Drive Components
- Identifying Electrical Measuring Tools and Functions
- Identifying Basic Startup Procedures for AC and DC Drives
- Using a HIM to Configure, Control, and Monitor a Drive
- Performing Preventative Maintenance and Basic Troubleshooting for Drives

Audience

This book is intended for individuals who have some experience with electric motors and are interested in understanding AC and DC drives.

ControlLogix Troubleshooting With a New Mobile Learning App

Troubleshooting on-demand when and where you need it

The ControlLogix Troubleshooting Guide mobile app contains electronic paths that walk you through faults that can occur on a system. This interactive mobile app is specifically designed for use on the plant floor. The troubleshooting guide is filled with procedures, error code information, and status indicator listings with recommended actions, reference charts, and hardware/software diagrams.

Mobile App Features:

- Detailed illustrations with pertinent troubleshooting information
- Consistent starting point from which to logically begin troubleshooting
- Important safety considerations, precautions, and general warnings
- Logical progression of questions, causes, and actions to determine the problem
- Easy and fast navigation from screen to screen
- Search and bookmark functionality
- Animations of LED lights, hardware views, and software procedures
- Embedded videos, user manuals, diagrams, and PDF documents
- Definition hot-spots, links to embedded glossary, and ability to look up terms via web
- Ability to add, access, and delete user notes
- User-friendly, high-resolution interface

Compatibility

- Apple iOS 5.0 iPhone and iPad
- Android 3.1 Smartphone and Tablet
- Windows XP
- Windows 7
- Mac 10.7

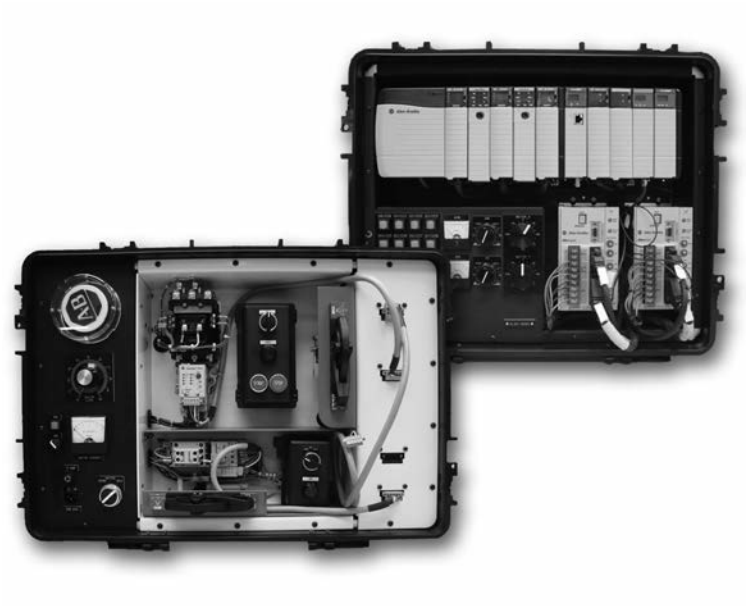
Availability

The ControlLogix Troubleshooting App can be found in iTunes and the Google Play Store.

Workstations

Training Workstations

Practice and Reinforce Your Job Skills



Hands-On Training

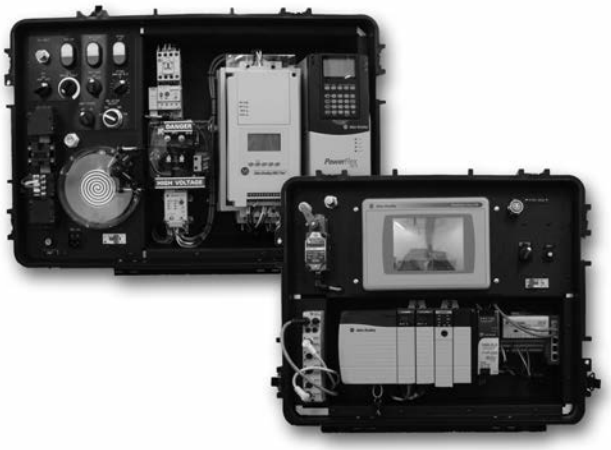
Your staff benefits from hands-on training in real world environments. Increase productivity and your bottom line via factory simulation.

Workstations provide ideal practice for:
- New hires
- New technologies
- System upgrades
- New production processes
- Transitioning employees
- Competency assessments

Superior tools and technology are the most obvious building blocks of success in today's manufacturing operations. Those with the best tools coupled with strategic innovation tend to get the best results. But this isn't the whole equation because even automated tools are essentially "enablers"… extensions of a machine user whose knowledge, skill, and productivity are the ultimate drivers of your success. Rockwell Automation understands this, which is why we build training workstations to optimize the productivity of both your manufacturing and human assets.

Built from the same proven Rockwell Automation technologies you use every day, our training workstations precisely mirror your manufacturing processes for the most realistic experience possible. Whether you're introducing new skills, bringing skills up-to-date or conducting pre-deployment testing on a new process before going "live," our training workstations effectively get employees up-to-speed, while supporting manufacturing's human dimension for the best results.

Training workstations can now be added to Rockwell Automation Parts Management Agreements, thereby giving you greater flexibility and value. Ask your local Rockwell Automation sales office or Allen-Bradley distributor for more details.



Check Out These New Workstations!

- **Automation Ferris Wheel Workstation**
  ABT-TDFW100
- **Positioning Fault Simulator**
  ABT-TDPOSITION
- **Kinetix 6500 Workstation**
  ABT-TDK6500
- **Ethernet I/P Workstation w/ Stratix 8000**
  ABT-TDENETS8K
- **PlantPAX Process System Workstation**
  ABT-TDPAX
- **SLC 500 Training Workstation**
  ABT-TDSLCN
  ABT-TDSLCN2
- **Conveyor Assembly Workstations**
  ABT-TDAST
  ABT-TDASTCLX
  ABT-TDASTCMPX
  ABT-TDASTLITE
  ABT-TDASTLITECLX
  ABT-TDASTLITEMPX

Lab Books

For practice exercises related to training workstations, these self-paced lab books are available:

- **PowerFlex 700 Vector Control Configuration and Startup**
  ABT-CCA161-TLB
- **PowerFlex 700 Vector Control Maintenance and Troubleshooting**
  ABT-CCA163-TLB
- **ControlLogix System Fundamentals**
  ABT-CCP146-TLB
- **RSLogix 5000 Basic Ladder Logic Programming**
  ABT-CCP151-TLB
- **CompactLogix Fundamentals and Troubleshooting**
  ABT-CCP298-TLB
- **GuardLogix Application Development**
  ABT-SAF-LOG101-TLB
- **GuardLogix Fundamentals and Maintenance**
  ABT-SAF-LOG103-TLB
- **PowerFlex 700 Vector Control Communications on DeviceNet**
  ABT-CCA162-TLB
- **DeviceNet & RSNetWorx Configuration and Troubleshooting**
  ABT-CCP164-TLB
- **PowerFlex 700 Vector Control Communications on ControlNet** *(Requires 2 workstations: ABT-TDPF700 and ABT-TDCNET1)*
  ABT-CCA164-TLB
- **Introduction to Automation and Integrated Architecture**
  ABT-CIA101-TLB
- **Motion Programming Using Ladder Logic**
  ABT-CCN142-TLB
- **RSLogix 5000 Maintenance and Troubleshooting**
  ABT-CCP153-TLB
- **RSLogix 5000 Fundamentals**
  ABT-CCP299-TLB
- **PhaseManager Project Design**
  ABT-CCP711-TLB
- **Ultra 3000 Digital Servo Drive Programming**
  ABT-CCN191-TLB
- **EtherNet/IP Design and Troubleshooting**
  ABT-CCP178-TLB
- **SLC 500 and RSLogix 5000 Maintenance and Troubleshooting**
  ABT-CCPS43-TLB
- **FactoryTalk View ME and PanelView Plus Programming**
  ABT-CCV204-TLB
- **FactoryTalk View SE Maintenance and Troubleshooting**
  ABT-CCV206-TLB

Automation Ferris Wheel Workstation

Catalog #: ABT-TDFW100

Configuration
- Control hardware
  - 1 24V power supply
  - 1 1769-PA2 power supply
  - 1 1769-L32E CompactLogix controller
  - 1 1769-IQ16 DC input module
  - 1 1769 OB16 DC output module
  - 1 PowerFlex 40P AC drive with remote HIM
- Network hardware
  - 1 1783-US08T 8-port unmanaged Ethernet switch
  - 4 Ethernet cables
- Operator interface panel
  - 1 illuminated E-stop
  - 7 push buttons
  - 5 pilot lights
  - 1 dual push button/pilot light
  - 1 3-position switch
  - 2 2-position switches (1 with key)
  - PanelView Plus 600 color HMI terminal
- Ferris wheel assembly
  - 1 plastic Ferris wheel with 6 seats
  - 1 230V motor
  - 1 encoder
  - 1 photo-eye
  - 1 2-color stack light
  - 1 plexiglass safety cube to cover the Ferris wheel assembly during operation

Dimensions

Automation Workstation
- Width: 25 in. (64 cm)
- Height: 28 in. (71 cm)
- Depth: 18 in. (46 cm)
- Weight: 90 lb (41 kg)

Ferris Wheel Assembly
- Width: 20 in. (51 cm)
- Height: 9.5 in. (24 cm)
- Depth: 8 in. (20 cm)
- Weight: 20 lb (9 kg)

Lead Time = 7 weeks*

Note: See page 184 for more details and photos of this workstation

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Integrated Architecture Workstation

Catalog #: ABT-TDIA

Configuration
- 0.5 Hp PowerFlex 40 AC drive
- Network hardware
  - 1 ControlNet-to-DeviceNet linking device
  - 1 ControlNet Flex I/O adapter module
  - 1 NETGEAR 5-port EtherNet switch
  - 1 RightSight™ photoeye
  - 1 tower light
- ControlLogix hardware
  - 1 10-slot I/O chassis
  - 1 1756 system power supply
  - 2 ControlLogix processor modules
  - 1 DC input module
  - 1 DC output module
  - 1 analog input module
  - 1 analog output module
  - 1 ControlNet bridge module
  - 1 EtherNet/IP bridge module
  - 1 DeviceNet scanner module
- FlexLogix hardware
  - 1 DC input/output combo module
  - 1 analog input/output combo module
- Motion control hardware
  - 1 M08SE Sercos interface module
  - 1 Kinetix integrated IAM drive
- PanelView Plus 600 terminal

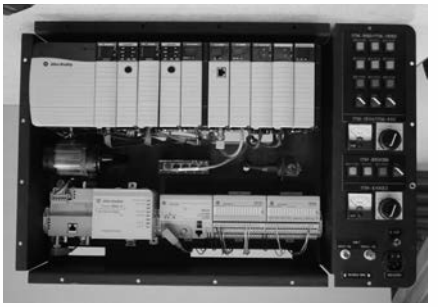
Dimensions

Box 1
- Width: 22 in. (56 cm)
- Height: 31 in. (79 cm)
- Depth: 12 in. (30 cm)
- Weight: 70 lb (32 kg)

Box 2
- Width: 21 in. (53 cm)
- Height: 29 in. (74 cm)
- Depth: 12 in. (30 cm)
- Weight: 35 lb (16 kg)

Related Courses
- CIA101

Related Products
- *Introduction to Automation and Integrated Architecture Lab Book* (ABT-CIA101-TLB)



Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

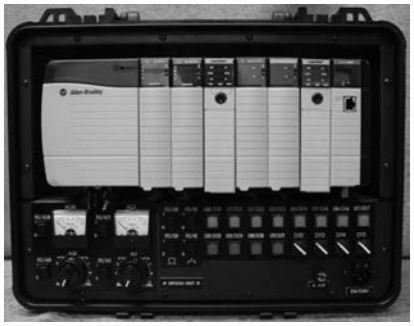
ControlLogix Workstation - No Motion (7-Slot Chassis)

Catalog #: ABT-TDCLX2

Configuration
- Network hardware
  - 1 ControlNet bridge module
  - 2 ControlNet taps
  - 2 terminators
- Control hardware
  - 1 7-slot I/O chassis
  - 1 1756 system power supply
  - 2 ControlLogix processor modules
  - 1 DC input module
  - 1 DC output module
  - 1 analog input module
  - 1 analog output module
- Programming cable
- Operator interface panel
  - 12 illuminated push buttons
  - 2 potentiometers
  - 2 analog voltmeters

Compatibility
The ControlLogix Workstation can be used with the Advanced Communications Workstation (ABT-TDCLXCOM).

Dimensions
- Width: 20 in. (51 cm)
- Height: 16 in. (41 cm)
- Depth: 9 in. (23 cm)
- Weight: 90 lb (41 kg)



Lead Time = 7 weeks*

Related Courses
All non-motion related courses in the ControlLogix/Logix5000 curriculum

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Related Products
- All RSLogix 5000 software procedures guides
- *ControlLogix 1756-L7x and L6x Troubleshooting Guide* (ABT-1756-TSJ20)
- *Logix5000 Systems Glossary* (ABT-1756-TSG10)
- *Logix5000 Documentation Reference Guide CD* (ABT-1756-DRG70)

ControlLogix Workstation - No Motion and No Controller (7-Slot chassis)

Catalog #: ABT-TDCLX2NP

Configuration
- Network hardware
  - 1 ControlNet bridge module
  - 2 ControlNet taps
  - 2 terminators
- Control hardware
  - 1 7-slot I/O chassis
  - 1 1756 system power supply
  - 1 DC input module
  - 1 DC output module
  - 1 analog input module
  - 1 analog output module
- Programming cable
- Operator interface panel
  - 12 illuminated push buttons
  - 2 potentiometers
  - 2 analog voltmeters

Dimensions
- Width: 20 in. (51 cm)
- Height: 16 in. (41 cm)
- Depth: 9 in. (23 cm)
- Weight: 90 lb (41 kg)

Related Courses
All non-motion courses in the ControlLogix/Logix 5000 curriculum

Related Products
- All RSLogix 5000 software procedures guides
- *ControlLogix 1756-L7x and L6x Troubleshooting Guide* (ABT-1756-TSJ20)
- *Logix5000 Systems Glossary* (ABT-1756-TSG10)
- *Logix5000 Documentation Reference Guide CD* (ABT-1756-DRG70)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

ControlLogix Workstation - No Motion (10-Slot chassis)

Catalog #: ABT-TDCLX3

Configuration
- Network hardware
  - 1 EtherNet module
  - 1 ControlNet bridge module
  - 2 ControlNet taps
  - 2 terminators
- Control hardware
  - 1 10-slot I/O chassis
  - 1 1756 system power supply
  - 2 ControlLogix processor modules
  - 1 DC input module
  - 2 DC output module
  - 1 analog input module
  - 1 analog output module
- Programming cable
- Operator interface panel
  - 12 illuminated push buttons
  - 2 potentiometers
  - 2 analog voltmeters

Dimensions
- Width: 20 in. (51 cm)
- Height: 16 in. (41 cm)
- Depth: 9 in. (23 cm)
- Weight: 70 lb (33 kg)

Related Courses
All courses in the ControlLogix/Logix 5000 curriculum

Related Products
- All RSLogix 5000 software procedures guides
- ControlLogix and RSLogix 5000 lab books
- *ControlLogix 1756-L7x and L6x Troubleshooting Guide* (ABT-1756-TSJ20)
- *Logix5000 Systems Glossary* (ABT-1756-TSG10)
- *Logix5000 Documentation Reference Guide CD* (ABT-1756-DRG70)

Note: This workstation includes a 10-slot I/O chassis and offers more flexibility and expandability.

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

ControlLogix Workstation - No Motion and No Controller (10-Slot chassis)

Catalog #: ABT-TDCLX3NP

Configuration
- Network hardware
  - 1 EtherNet module
  - 1 ControlNet bridge module
  - 2 ControlNet taps
  - 2 terminators
- Control hardware
  - 1 10-slot I/O chassis
  - 1 1756 system power supply
  - 1 DC input module
  - 2 DC output module
  - 1 analog input module
  - 1 analog output module
- Programming cable
- Operator interface panel
  - 12 illuminated push buttons
  - 2 potentiometers
  - 2 analog voltmeters

Dimensions
- Width: 20 in. (51 cm)
- Height: 16 in. (41 cm)
- Depth: 9 in. (23 cm)
- Weight: 70 lb (33 kg)

Related Courses
All courses in the ControlLogix/Logix5000™ curriculum

Related Products
- All RSLogix 5000 software procedures guides
- ControlLogix and RSLogix 5000 lab books
- *ControlLogix 1756-L7x and L6x Troubleshooting Guide* (ABT-1756-TSJ20)
- *Logix5000 Systems Glossary* (ABT-1756-TSG10)
- *Logix5000 Documentation Reference Guide CD* (ABT-1756-DRG70)

Note: This workstation includes a 10-slot I/O chassis and offers more flexibility and expandability.

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

ControlLogix Motion Workstation (10-Slot chassis with Ultra 3000)

Catalog #: ABT-TDCLX3K

Configuration
- Network hardware
  - 1 EtherNet bridge module
  - 1 ControlNet bridge module
  - 2 ControlNet taps
  - 2 terminators
- Control hardware
  - 1 10-slot I/O chassis
  - 1 1756 system power supply
  - 2 ControlLogix processor modules
  - 1 DC input module
  - 2 DC output modules
  - 1 analog input module
  - 1 analog output module
- Programming cable
- Motion control hardware
  - 2 NEMA wiring arms
  - 4 IEC wiring arms
  - 1 Sercos motion module
  - 2 Ultra 3000 servo drives
  - 2 TLY-Series motors
  - 2 drive interfaces
- Operator interface panel
  - 12 illuminated push buttons
  - 2 potentiometers
  - 2 analog voltmeters

Compatibility
The ControlLogix Motion Workstation can be used with the Advanced Communications Workstation (ABT-TDCLXCOM).

Dimensions
- Width: 20 in. (51 cm)
- Height: 16 in. (41 cm)
- Depth: 9 in. (23 cm)
- Weight: 90 lb (41 kg)

Related Courses
All courses in the ControlLogix/Logix 5000 curriculum

Related Products
- All RSLogix 5000 software procedures guides
- ControlLogix, RSLogix 5000, and Motion lab books
- *ControlLogix 1756-L7x and L6x Troubleshooting Guide* (ABT-1756-TSJ20)
- *Logix5000 Systems Glossary* (ABT-1756-TSG10)
- *Logix5000 Documentation Reference Guide CD* (ABT-1756-DRG70)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

CompactLogix Workstation

Catalog #: ABT-TDIALITE

Configuration
- 0.5 Hp PowerFlex 40 AC drive
- Network hardware:
  - 2 dual input and output push buttons
  - 4 digital output pilot lights
  - 1 analog input
  - 1 analog meter
- CompactLogix hardware:
  - 1 CompactLogix rack
  - 1 system power supply
  - 1 CompactLogix controller
  - 1 digital output module
  - 1 analog output module
- POINT I/O™ hardware:
  - 1 EtherNet adapter
  - 1 digital input module
  - 1 digital output module
  - 2 dual input and output push buttons
- PanelView Plus 600 terminal

Dimensions (Box)
- Height: 24.1 in. (54.6 cm)
- Length: 20.3 in. (51.6 cm)
- Width: 12.8 in. (32.5 cm)
- Weight: 40 lb (18.2 kg)

Related Courses
- CCP298

Related Products
- *CompactLogix System Fundamentals and Troubleshooting Lab Book* (ABT-CCP298-TLB)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

GuardLogix® Controller Workstation

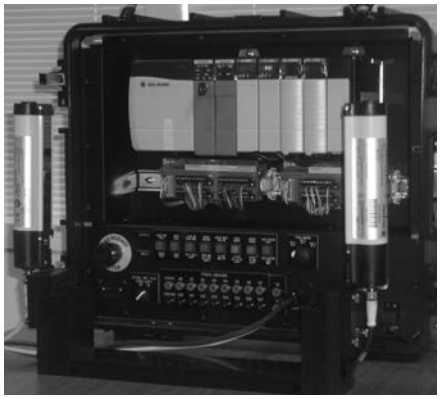
Catalog #: ABT-TDGRDLX1

Configuration
- GuardLogix primary controller
- GuardLogix safety partner
- 7-slot ControlLogix chassis
- ControlLogix power supply
- 8 dual discrete inputs/outputs
- CompactBlock™ I/O safety modules:
  - 1791ES-IB16 Ethernet/IP module with 16 safety inputs and 16 pulse test outputs
  - 1791DS-IB8XOB8 DeviceNet module with 8 safety inputs and 8 safety solid-state outputs
- Communication modules:
  - EtherNet/IP bridge module
  - DeviceNet bridge module
- Light curtain
- E-stop push button
- Patch connectors
- Stratix 2000™ 5-port Ethernet switch
- MatGuard™ safety mat

Dimensions
- Width: 24 in. (61 cm)
- Height: 20 in. (51 cm)
- Depth: 12 in. (30 cm)
- Weight: 58 lb (27 kg)

Related Courses
- SAF-LOG101
- SAF-LOG103

Related Products
- *GuardLogix Documentation Reference Guide CD* (ABT-GRDLX-DRG70)
- *GuardLogix Fundamentals and Maintenace Lab Book* (ABT-SAF-LOG103-TLB)
- *GuardLogix Application Development Lab Book* (ABT-SAF-LOG101-TLB)



Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

GuardPLC™ Workstation

Catalog #: ABT-TDGRDPLC1

Configuration
- GuardPLC 1600 controller
- Distributed I/O expansion module
- Power switch
- 120V/220V plug receptacle
- E-stop push button
- 6 dual discrete inputs/outputs
- Patch connectors

Dimensions
- Width: 19 in. (48 cm)
- Height: 15 in. (38 cm)
- Depth: 8 in. (20 cm)
- Weight: 20 lb (9 kg)

Related Courses
- SAF-PLC101
- SAF-PLC102
- SAF-PLC103

Related Products
- *RSLogix Guard PLUS and GuardPLC Procedures Guide* (ABT-1753-TSJ50)
- *GuardPLC Documentation Reference Guide CD* (ABT-1753-DRG70)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

PowerFlex® DC Workstation

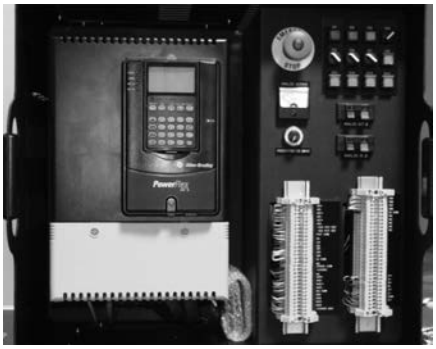
Catalog #: ABT-TDPFDC

Configuration
- 3 Hp PowerFlex Digital DC drive
- EtherNet/IP communications
- 230V 3-Phase AC operation
- Drive operator panel that includes:
  - Emergency stop button
  - Programmable digital outputs
  - User-configurable digital inputs
  - 0…10V speed reference
  - 0…10V analog output
- Digital programming keypad
- Optional: Enhanced digital programming keypad
- 3 Hp DC motor with encoder feedback and speed switch
- User-accessible wiring terminals
- Hinged covers for drive access

Dimensions (Drive)
- Width: 23 in. (59 cm)
- Height: 20 in. (51 cm)
- Depth: 16 in. (41 cm)
- Weight: 65 lb (30 kg)

Dimensions (Motor)
- Width: 38 in. (96 cm)
- Height: 20 in. (51 cm)
- Depth: 24 in. (60 cm)
- Weight: 100 lb (45 kg)

For the size of each shipping case, add 3 in. (8 cm) to width and depth, and 8 in. (20 cm) to height.



Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Related Courses
- CDD161
- CDD163

Related Products
- *PowerFlex DC Documentation Reference Guide CD* (ABT-20P-DRG70)

PowerFlex 700 Workstation

Catalog #: ABT-TDPF700

Configuration
- 1 Hp PowerFlex 700 AC drive
- Remote I/O communications
- 120V AC operation
- Drive operator panel that includes:
  - Programmable digital output
  - User-configurable digital inputs
  - 0…10V speed reference
  - 0…10V analog output
- Digital programming terminal
- 1 Hp AC motor with encoder feedback
- Fault simulation switches
- User-accessible wiring terminals

Compatibility
The PowerFlex 700 Workstation can be used with the Fan Demo Unit (ABT-TDPF700-FAN).

Dimensions (Drive)
- Width: 25 in. (64 cm)
- Height: 20 in. (51 cm)
- Depth: 17 in. (43 cm)
- Weight: 57 lb (26 kg)

Dimensions (Motor)
- Width: 25 in. (64 cm)
- Height: 20 in. (51 cm)
- Depth: 12 in. (30.5 cm)
- Weight: 67 lb (30 kg)

For the size of each shipping case, add 3 in. (8 cm) to width and depth, and 8 in. (20 cm) to height.

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Related Courses
- CCA161 • CCA162 • CCA163 • CCA164

Related Products
- *PowerFlex 700 Standard and Vector Control Troubleshooting Guide* (ABT-20B-TSJ20)
- *PowerFlex 700 Standard and Vector Control Procedures Guide* (ABT-20B-TSJ50)
- *PowerFlex 700 Lab Books*

PowerFlex 755 Workstation

Catalog #: ABT-TDPF755

Configuration

- 1 Hp PowerFlex 755 drive
  - Embedded Ethernet/IP communications
  - Human interface module
- Communications carrier card (Used for installing 20-COMM communication adapter module)
- 120V AC operation
- 1/30 Hp 230V induction motor with optical incremental encoder (built into drive workstation)
- Drive operator panel that includes:
  - Programmable digital outputs
  - Programmable digital inputs
  - 0…10V speed reference potentiometer
  - 0…10V analog output
  - User-configurable analog input
  - User-configurable analog output
  - Safe-speed relay with guard locking switch
  - Safe-off 24V LED module with latch
- External 1 Hp motor with encoder feedback

Compatibility

The PowerFlex 755 Workstation can be used with the Fan Demo Unit (ABT-TDPF700-FAN).

Dimensions (Full Workstation)

- Width: 24 in. (61 cm)
- Height: 20 in. (51 cm)
- Depth: 16 in. (41 cm)
- Weight: 70 lb (22.7 kg)

Approximate Dimensions (1 Hp External AC Motor)

- Width: 25 in. (63 cm)
- Height: 19 in. (48 cm)
- Depth: 14 in. (36 cm)
- Weight: 67 lb (30 kg)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

For the size of each shipping case, add 3 in. (8 cm) to width and depth, and 8 in. (20 cm) to height.

Related Courses

- CCA182 • CCA183 • CCA184

Related Products

- *PowerFlex 750-Series AC Drives Documentation Reference Guide CD* (ABT-20G-DRG70)

Fan Demo Unit

Catalog #: ABT-TDPF700FAN

Configuration

- Vertical mounted fan and 400V AC motor
- Manual pressure damper
- Upstream air pressure transducer
- Motor connector and cable
- I/O connector and cable
- AC power cord
- 2 A fuse
- 4…20 mA output

Compatibility

The Fan Demo Unit can be used with the PowerFlex 700 and PowerFlex 755 Workstations (ABT-TDPF700 and ABT-TDPF755).

Dimensions

- Width: 14 in. (36 cm)
- Height: 20 in. (51 cm)
- Depth: 15 in. (38 cm)
- Weight: 25 lb (11 kg)

Related Courses

- CCA161 • CCA162
- CCA163 • CCA164

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

1336 FORCE™ AC Drive Workstation

Catalog #: ABT-TD1336T

Configuration
- 7.5 Hp 1336 FORCE AC drive
  - Standard adapter
  - 115V AC control interface
  - DH+™ adapter
  - English firmware
- 120V AC operation
- Drive operator panel
  - Program digital output, run, fault, and alarm indicators
  - User-configurable digital inputs
  - External fault input
  - Auxiliary 120V AC outlet
  - 0…10V and 4…20 mA speed reference
  - Start, stop, enable auxiliary, speed select, and speed inputs
  - E-stop push button
- Enhanced hand-held programming terminal
- Graphic programming terminal
- PLC-5®/40 processor
- 3 Hp Reliance Electric AC motor with encoder feedback
- Hand brake load
- SCANport™ adapters
  - Serial communications adapter
  - Single-point remote I/O adapter
  - Remote I/O communications interface
  - Port replicator
- SCE (Saginaw Control and Engineering) electrical enclosure on wheels

Dimensions
- Width: 36 in. (92 cm)
- Height: 60 in. (153 cm)
- Depth: 28 in. (72 cm)
- Weight: 650 lb (295 kg)

Legacy Drive Unit:
Call to check for availability

Compatibility

IMPORTANT: The Drive Troubleshooting Box is not compatible with a 1336 FORCE AC drive that uses a PLC processor adapter.

Related Courses
- CCA101

Related Products
- *AC and DC Motor and Drive Glossary* (ABT-D100-TSG10)

1336 IMPACT™ AC Drive Workstation

Catalog #: ABT-TD1336E

Configuration
- 7.5 Hp 1336 IMPACT AC drive
  - Remote I/O communications
  - 115V AC control interface
  - Encoder feedback
- 120V AC operation
- Drive operator panel
  - At-speed, run, fault, and alarm indicators
  - User-configurable digital inputs
  - Pulse and 4…20 mA speed reference
  - Start, stop, enable auxiliary, speed select, and speed inputs
  - Intelligent output
  - E-stop push button
  - Auxiliary 120V AC outlet
- 2 hand-held programming terminals
- PLC control system
  - PLC-5/40 processor
  - 2 1771-SIM I/O modules
  - 4-slot I/O chassis
  - 1-slot power supply
- SCANport adapters
  - Port replicator
  - Serial communications adapter
- 3 Hp Reliance Electric AC motor with encoder feedback
- Hand brake load
- SCE (Saginaw Control and Engineering) electrical enclosure on wheels

Dimensions
- Width: 36 in. (92 cm)
- Height: 60 in. (153 cm)
- Depth: 28 in. (72 cm)
- Weight: 650 lb (295 kg)

Legacy Drive Unit:
Call to check for availability

Related Courses
- CCA101

Related Products
- *AC and DC Motor and Drive Glossary* (ABT-D100-TSG10)

1336 PLUS™ II AC Drive Workstation

Catalog #: ABT-TD1336F

Configuration
- 7.5 Hp 1336 PLUS II AC drive, including encoder feedback interface
- 120V AC operation
- Drive operator panel
  - User-configurable digital inputs
  - Analog option modules
  - 4 programmable digital outputs
  - 0…10V and 4…20 mA speed reference
  - Start, stop, enable auxiliary, speed select, and 1336 PLUS II speed inputs
  - E-stop push button
- Hand-held programming terminal
- PLC control system
  - PLC-5/40 processor
  - 2 1771-SIM I/O modules
  - 4-slot I/O chassis
  - 1-slot power supply
- 3 Hp Reliance Electric AC motor with encoder feedback
- Hand brake load
- SCANport adapters
  - Single-point remote I/O communications adapter
  - Serial communications adapter
  - Port replicator
- SCE (Saginaw Control and Engineering) electrical enclosure on wheels

Dimensions
- Width: 36 in. (92 cm)
- Height: 60 in. (153 cm)
- Depth: 28 in. (72 cm)
- Weight: 650 lb (295 kg)

Legacy Drive Unit:
Call to check for availability

Related Courses
- CCA101
- CCA137

Related Products
- *1336 PLUS II Troubleshooting Guide* (ABT-1336F-TSJ20)
- *AC and DC Motor and Drive Glossary* (ABT-D100-TSG10)

Kinetix® 6000 Servo Drive Workstation

Catalog #: ABT-TD20941 (120V AC)
ABT-TD20942 (230V AC, 20 A Service Connectors)
ABT-TD20943 (230V AC, 30 A Service Connectors)

Configuration
- 2-axis power rail
- 120V AC operation
- Integrated axis module
- MP-Series motors
- Sercos card
- Fiber optic communication option
- Illuminated mushroom E-stop push button
- Integral surge suppression
- Auxiliary encoder
- Cable package
  - Universal feedback cable
  - Universal motor power cable
  - Lo-profile I/O connector kit
  - Lo-profile feedback connector kit
  - Lo-profile auxiliary feedback connector kit
- Hard-shell enclosure

Dimensions
- Width: 25 in. (64 cm)
- Height: 19 in. (48 cm)
- Depth: 10 in. (25 cm)
- Weight: 70 lb (32 kg)

Related Courses
- CCN142
- CCN190-LD
- CCN200

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Related Products
- *Motion Control Glossary* (ABT-M100-TSG10)
- *RSLogix 5000 and Logix5000 Motion Control Procedures Guide* (ABT-1756-TSJ52)
- *Motion Programming Using Ladder Logic Lab Book* (ABT-CCN142-TLB)

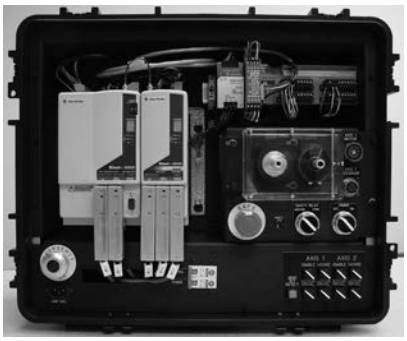
Kinetix 6000 Servo Drive Workstation with SafeOff

Catalog #: ABT-TD2094SO

Configuration
- 2-axis power rail
- 120V AC operation
- Integrated axis module
- MP-Series motors
- Sercos card
- Safety I/O card
- Fiber optic communication option
- Illuminated mushroom E-stop push button
- Integral surge suppression
- Auxiliary encoder
- Cable package
  - Universal feedback cable
  - Universal motor power cable
  - Lo-profile I/O connector kit
  - Lo-profile feedback connector kit
  - Lo-profile auxiliary feedback connector kit
- Hard-shell enclosure

Dimensions
- Width: 25 in. (64 cm)
- Height: 19 in. (48 cm)
- Depth: 10 in. (25 cm)
- Weight: 70 lb (32 kg)

Related Products
- *Motion Control Glossary* (ABT-M100-TSG10)
- *RSLogix 5000 and Logix5000 Motion Control Procedures Guide* (ABT-1756-TSJ52)



Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Kinetix 6500 Workstation

Catalog #: ABT-TDK6500

Configuration
- Kinetix 6500 integrated axis module (460V AC)
- Kinetix 6500 axis module (460V AC)
- EtherNet safe speed monitoring control module
- 2 MPL motors
- 5-port Stratix EtherNet switch
- Stratix ETAP
- TLS-3-GD2 guard locking switch
- Power supply 24V 5 A
- Safe-off button
- 2-position selector switch
- 2 photo switches

Dimensions
- Width: 28.1 in. (71.3 cm)
- Height: 20.3 in. (50.9 cm)
- Depth: 17.3 in. (43.9 cm)
- Weight: 113 lb (51.3 kg)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Ultra™ 3000 Servo Drive Workstation

Catalog #: ABT-TD20981 (120V AC)
ABT-TD20982 (230V AC, 20 A Service Connectors)
ABT-TD20983 (230V AC, 30 A Service Connectors)

Configuration
- MPL-A310P-MK22AA drive motor
- External encoder
- 120V AC operation
- UltraWare programming software
- DeviceNet communications
- Complete cable package
  - Drive cable
  - Feedback cable
  - Power cable
  - Serial cable
- Hard-shell enclosure

Dimensions
- Width: 22 in. (56 cm)
- Height: 9 in. (23 cm)
- Depth: 14 in. (36 cm)
- Weight: 33 lb (15 kg)

Related Courses
- CCN130

Related Products
- *Motion Control Glossary* (ABT-M100-TSG10)
- *RSLogix 5000 and Logix5000 Motion Control Procedures Guide* (ABT-1756-TSJ52)
- *Ultra 3000 Digital Servo Drive Programming Lab Book* (ABT-CCN191-TLB)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

ArmorStart Workstation

Catalog #: ABT-TDARMORDMC

Configuration
- 24V VFD ArmorStart Distributed Motor Controller
  - DeviceNet communications
- Local CB Disconnect
- DeviceNet configuration terminal
- I/O capabilities:
  - 4 DC inputs (sourced from DeviceNet power 24V DC)
  - 2 relay outputs (sourced from control power)

Dimensions
- Width: 23 in. (58 cm)
- Height: 19 in. (48 cm)
- Depth: 15 in. (38 cm)

Related Courses
- CCA190

Related Products
- *DeviceNet and RSNetWorx Procedures Guide* (ABT-N100-TSJ50)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

1771 I/O Rack System Workstation

Catalog #: ABT-TDPLC1 (120V AC)
Catalog #: ABT-TDPLC2 (220V AC)

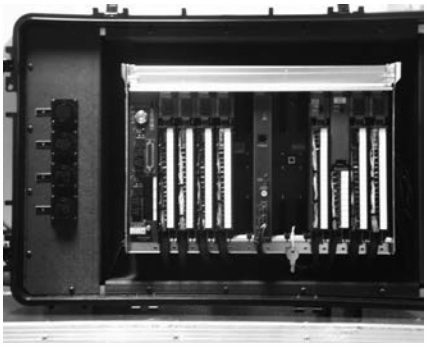
Configuration
- PLC-5/40 processor
- 12-slot I/O chassis
- Single-slot power supply
- Digital I/O modules
  - 3 high-density 10…30V DC input modules
  - 3 high-density 10…60V DC output modules
- Intelligent I/O modules
  - 1 analog input module
  - 1 analog output module
- 3 empty chassis slots

Important: Unit does not contain onboard I/O simulation. The Universal I/O Simulator Workstation (ABT-TDUI01 and ABT-TDUI02) is sold separately

Dimensions
- Width: 30 in. (76 cm)
- Height: 21 in. (53 cm)
- Depth: 13 in. (33 cm)
- Weight: 70 lb (32 kg)

Related Courses
- CCP122
- CCP310-LD
- CCP409
- CCP410
- CCP411
- CCP412
- CCPS65

Related Products
- All PLC-5 processors procedures, troubleshooting, and documentation reference guides



Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

1746 I/O Rack System Workstation

Catalog #: ABT-TDSLC1 (120V AC)
Catalog #: ABT-TDSLC2 (220V AC)

Configuration
- SLC 5/04 processor
- 10-slot I/O chassis
- Power supply (5 A)
- Digital I/O modules
  - 3 DC input modules (16 pt.) - sink 10…30V DC
  - 3 DC output modules (16 pt.) - source 10…50V DC
- Intelligent I/O modules
  - 2 analog combination modules
- Advanced interface converter
- Bulletin 800T E-stop push button
- Covered empty chassis slot
- Auxiliary AC power outlets

Accessories (optional - sold separately)
- 1746 PID Simulation Kit
  - Catalog Number - ABT-TDSLCPID
- Universal I/O Simulator Workstation
  - Catalog Number ABT-TDUI01/ABT-TDUI02

Dimensions
- Width: 24 in. (61 cm)
- Height: 16 in. (41 cm)
- Depth: 13 in. (32 cm)
- Weight: 50 lb (23 kg)

Related Courses
All courses the SLC 500 processors curriculum

Related Products
- All SLC 500 processors, procedures, troubleshooting, and documentation reference guides
- *SLC 500 and RSLogix 5000 Maintenance and Troubleshooting Lab Book* (ABT-CCPS43-TLB)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Important: Unit does not contain onboard I/O simulation. The Universal I/O Simulator Workstation (ABT-TDUI01 and ABT-TDUI02) is sold separately

SLC 500 Workstation with Advanced I/O

Catalog #: ABT-TDSLCN

Configuration
- SLC 5/05 processor
- 7-slot I/O chassis
- Power supply (5 A)
- Discrete modules
  - 2 input modules (24VDC.)
  - 2 output modules (24VDC.)
- Analog modules
  - 1 input module
  - 1 output module
- 1 arc isolated link coupler
- 2 remote BCD displays with 12V DC input
- 2 DC volt meters (0…10V DC)
- 2 bargraph meters (Texmate)
- 4 potentiometers (10K ohm)
- 8 3-series thumbwheel switches (BCD/Hexadecimal)
- 1 volt regulator (12V)
- Hard-shell enclosure
- Auxiliary AC power outlets

Dimensions
- Width: 28.3 in. (71.9 cm)
- Height: 20.4 in. (51.8 cm)
- Depth: 9.2 in. (23.4 cm)
- Weight: 50 lb (23 kg)

Related Products
- All SLC 500 processors, procedures, troubleshooting, and documentation reference guides

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

SLC 500 Workstation

Catalog #: ABT-TDSLCN2

Configuration
- SLC 5/03 processor
- 7-slot I/O chassis
- Power supply (rack mount)
- Digital I/O modules
  - 1 DC input module (16 pt.)
  - 1 DC output module (16 pt.)
- Analog I/O modules
  - 2 analog input modules
  - 2 analog output modules
- 2 panel meters (0…10V)
- 2 1K Pots
- 4 selector switches
- Hard-shell enclosure

Dimensions
- Width: 19 in. (48 cm)
- Height: 14 in. (36 cm)
- Depth: 7 in. (18 cm)
- Weight: 32 lb (15 kg)

Related Products
- All SLC 500 processors, procedures, troubleshooting, and documentation reference guides

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Universal I/O Simulator Workstation

Catalog #: ABT-TDUIO1 (120V AC)
Catalog #: ABT-TDUIO2 (240V AC)

Configuration

- Digital inputs
  - 12 Bulletin 800A normally-open maintained push buttons
  - 3 Bulletin 800A normally-open momentary push buttons
  - 1 Bulletin 800A normally-closed momentary push button
- Digital outputs
  - 16 Bulletin 800A push-to-test pilot lights
- Bulletin 800T E-stop push button
- Intelligent inputs
  - 4 Bulletin 800T 10 kW potentiometers
- Intelligent outputs
  - 2 DC analog meters (0…10V)
  - 2 DC digital bar graph meters (0…5V)
- BCD inputs
  - 1 four-digit BCD thumbwheel input switch (0…9)
  - 1 four-digit BCD thumbwheel input switch (0…F)
- BCD outputs
  - 2 four-digit BCD LED output displays
- 4 interface cables

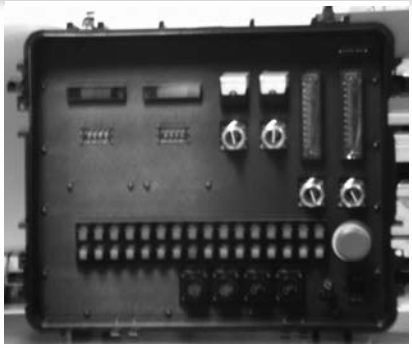
Compatibility

The Universal I/O Simulator can be used with the following workstations (sold separately):

- 1746 I/O Rack System (ABT-TDSLC1)
- 1771 I/O Rack System (ABT-TDPLC1)

Dimensions

- Width: 25 in. (64 cm)
- Height: 21 in. (53 cm)
- Depth: 10 in. (25 cm)
- Weight: 70 lb (32 kg)



Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Related Courses

- All courses in the PLC-5 processor curriculum
- All courses in the SLC 500 processor curriculum

Related Products

- All PLC-5 processors procedures, troubleshooting, and documentation reference guides
- All SLC 500 processors procedures, troubleshooting, and documentation reference guides
- *SLC 500 and RSLogix 5000 Maintenance and Troubleshooting Lab Book* (ABT-CCPS43-TLB)

ControlNet Workstation

Catalog #: ABT-TDCNET1

Configuration

- Control hardware
  - 1 1771 I/O chassis, 4-slot
  - 1 1771 DC input module
  - 1 1771 slot power supply
  - 1 1771 SIM module
  - 1 1771 high-speed counter module
  - 1 ControlNet PLC-5 processor
  - 1 1756 I/O chassis, 4-slot
  - 1 1756 rack power supply
  - 1 1756 DC input module
  - 1 1756 ControlNet bridge module
  - 1 ControlLogix controller
- ControlNet cabling system
- Flex I/O system
  - 2 adapters
  - 2 analog I/O modules
  - 6 bases
  - 2 DC output modules
- Operator interface panel
  - 8 illuminated push buttons
  - 8 selector switches
  - 1 potentiometer
  - 2 DC volt meters
- 2 workstation enclosures

Dimensions

PLC-5 Unit

- Width: 32 in. (81 cm)
- Height: 26 in. (66 cm)
- Depth: 16 in. (41 cm)
- Weight: 108 lb (49 kg)

ControlLogix Unit

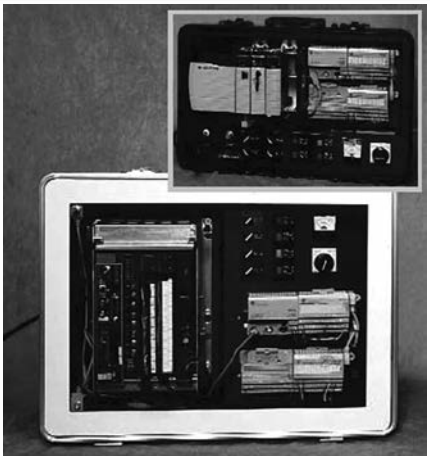
- Width: 26 in. (66 cm)
- Height: 19 in. (48 cm)
- Depth: 24 in. (61 cm)
- Weight: 93 lb (42 kg)

Related Courses

- CCP173

Related Products

- *ControlNet and RSNetWorx Networks Troubleshooting Guide* (ABT-N200-TSJ20)
- *ControlNet and RSNetWorx Networks Procedures Guide* (ABT-N200-TSJ50)



Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

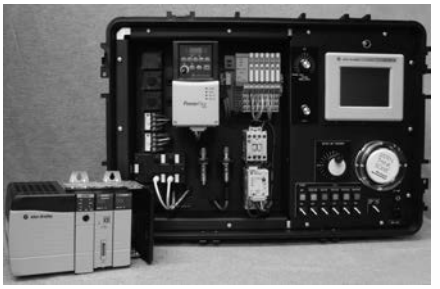
DeviceNet Workstation

Catalog #: ABT-TDDNET2

Configuration
- 2 terminators
- 3 T-port taps
- 2 open QuikLink taps
- 2 micro QuikLink taps
- 4 DeviceNet drop lines
- DeviceNet flat media
- ArmorBlock MaXum input module
- ArmorBlock MaXum base
- 2 DeviceNet proximity sensors
- E3 overload relay-phase and load modulators
- Absolute multi-turn encoder
- 1734-ADN Point I/O adapter
- 1734-ADN Point I/O DeviceNet adapter
  - 3 Point I/O 4-pt. input modules
  - 3 Point I/O 4-pt. output modules
- PanelView Plus 600 terminal with DeviceNet adapter
- Drive system
  - 1 PowerFlex 40 drive
  - 1 PowerFlex 40 DeviceNet adapter
  - 1 AC motor
- ControlLogix system
  - 4-slot chassis
  - 1 power supply
  - 1756-L63 processor
  - EtherNet I/P bridge module
  - DeviceNet bridge scanner module

Dimensions
- Width: 29 in. (74 cm)
- Height: 20 in. (51 cm)
- Depth: 10 in. (25 cm)
- Weight: 45 lb (20 kg)

Related Courses
- CCP164



Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Related Products
- *DeviceNet and RSNetWorx Troubleshooting Guide* (ABT-N100-TSJ20)
- *DeviceNet and RSNetWorx Procedures Guide* (ABT-N100-TSJ50)
- *DeviceNet and RSNetWorx Configuration and Troubleshooting Lab Book* (ABT-CCP164-TLB)

EtherNet/IP Workstation

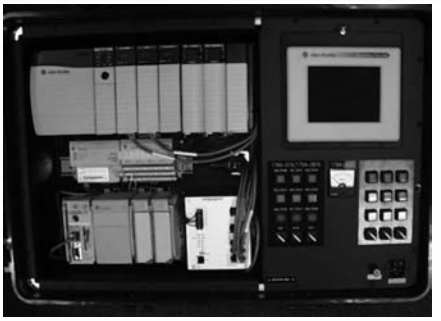
Catalog #: ABT-TDENETIP

Configuration
- 7-slot ControlLogix chassis with the following modules:
  - Controller
  - EtherNet/IP bridge module
  - EtherNet/IP web server module
  - DeviceNet scanner
  - Digital input module
  - Digital output module
- ControlLogix power supply
- CompactLogix™ chassis with the following modules:
  - 1769-L32E controller
  - 1769 digital input module
  - 1769 digital output module
- 1794-AENT EtherNet/IP adapter module with a four channel non-isolated analog output module
- PanelView Plus 600 terminal
- Stratix 6000 switch
- 18 dual discrete inputs/outputs
- 4 selector switches
- 1 analog output meter
- 1 photoeye

Dimensions
- Width: 30 in. (76 cm)
- Height: 21 in. (53 cm)
- Depth: 13 in. (33 cm)
- Weight: 45 lb (20 kg)

Related Courses
- CCP178

Related Products
- *EtherNet/IP Procedures Guide* (ABT-N300-TSJ50)
- *EtherNet/IP Documentation Reference Guide CD* (ABT-N300-DRG70)
- *EtherNet/IP Design and Troubleshooting Lab Book* (ABT-CCP178-TLB)



Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

EtherNet/IP Workstation with Stratix 8000

Catalog #: ABT-TDENETS8K

Configuration

- 7-slot ControlLogix chassis with the following modules:
  - Controller
  - EtherNet/IP bridge module
  - EtherNet/IP web server module
  - DeviceNet™ scanner
  - Digital input module
  - Digital output module
- ControlLogix power supply
- CompactLogix™ chassis with the following modules:
  - 1769-L32E controller
  - 1769 digital input module
  - 1769 digital output module
- 1794-AENT EtherNet/IP adapter module with a four channel non-isolated analog output module
- PanelView™ Plus 600 terminal
- Stratix 8000 Switch
- 18 dual discrete inputs/outputs
- 4 selector switches
- 1 analog output meter
- 1 photoeye

Dimensions

- Width: 30 in. (76 cm)
- Height: 21 in. (53 cm)
- Depth: 13 in. (33 cm)
- Weight: 45 lb (20 kg)

Related Products

- *EtherNet/IP Procedures Guide* (ABT-N300-TSJ50)
- *EtherNet/IP Documentation Reference Guide CD* (ABT-N300-DRG70)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Advanced Communications Workstation

Catalog #: ABT-TDCLXCOM

Configuration

- ControlNet™ box
  - PanelView 600 ControlNet terminal
  - 4-slot 1771 I/O chassis
  - 1771 I/O power supply
  - PLC-5/40C processor
  - 16-bit DC output module
  - Analog output module
  - LED display
  - 1771 simulator module
- DeviceNet™ box
  - PanelView™ 600 DeviceNet terminal
  - Photo switch
  - ArmorBlock® I/O
  - RediSTATION™ operator interface
  - Bulletin 160 drive with motor
  - 1756-DNB (DeviceNet bridge) module

Dimensions

DeviceNet Unit

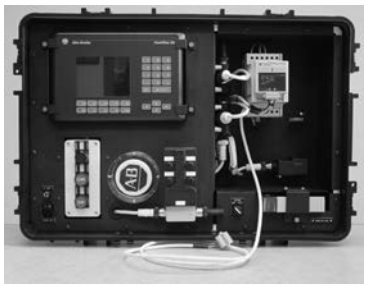
- Width: 32 in. (81 cm)
- Height: 24 in. (61cm)
- Depth: 14 in. (36 cm)
- Weight: 85 lb (39 kg)

ControlNet Unit

- Width: 33 in. (84 cm)
- Height: 22 in. (56 cm)
- Depth: 14 in. (36 cm)
- Weight: 95 lb (43 kg)

Related Products

- *DeviceNet and RSNetWorx Troubleshooting Guide* (ABT-N100-TSJ20)
- *DeviceNet and RSNetWorx Procedures Guide* (ABT-N100-TSJ50)
- *ControlNet and RSNetWorx Troubleshooting Guide* (ABT-N200-TSJ20)
- *ControlNet and RSNetWorx Procedures Guide* (ABT-N200-TSJ50)



Lead Time = 7 weeks*

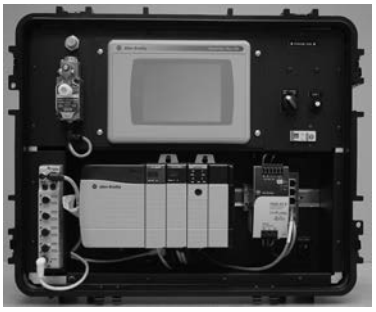
* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Intelligent Motor Control Workstation

Catalog #: ABT-TDIMC

Configuration
- E1 Plus DeviceNet module
- PowerFlex 700 Vector, LCD HMI
- 24V AC/DC SMC™ Flex, controller
- SMC Flex DeviceNet module
- 2 N.O. selector switch, 2-position
- 3 multi-function LEDs, 2-position

Dimensions
- Width: 28 in. (71 cm)
- Height: 20 in. (51 cm)
- Depth: 15 in. (38 cm)



Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Intelligent Motor Control Workstation with XM

Catalog #: ABT-TDIMCXM

Configuration
- PanelView Plus 700
- 4-slot ControlLogix chassis:
  - Logix5563 controller
  - DeviceNet bridge module
  - EtherNet/IP module
  - Slot filler
- XM-121 Dynamic Measurement module
- Hirschmann EtherNet switch
- DeviceNet analog limit switch and limit switch lever
- 24V DeviceNet I/O block, 8-input
- N.O. 2 selector switch, 2-position

Dimensions
- Width: 28 in. (71 cm)
- Height: 20 in. (51 cm)
- Depth: 15 in. (38 cm)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

IntelliCENTER Workstation

Catalog #: ABT-TDINTCENTER

Configuration

- Flywheel and protective cover
- Load rheostat with knob
- Simpson 1257 analog load meter
- 2-position selector, NEMA/MCS
- NEMA starter with E3 overload relay
- MCC operator station with Hand/Off/Auto selector, red RUN lamp, and Start/Stop push buttons
- MCC disconnect handle simulator with 802A-C33P4-S7 limit switch
- IEC contactor with 193 overload relay
- DeviceNet contactor interface
- 3-position Hand/Off/Auto selector
- Red run lamp
- Surface mount DeviceNet connectors

Related Courses

- CCI106-LD

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Process Workstation

Catalog #: ABT-TDPROCESS

HART Workstation Configuration

- 4-slot ControlLogix chassis:
  - Logix5563 Controller
  - EtherNet/IP bridge module
  - HART module
  - ControlNet redundant module
- Endress & Hauser temperature transmitter
- Stratix EtherNet switch, 5-port
- Flex I/O
  - Flex I/O adapter
  - Flex I/O digital combo module
  - Flex I/O analog combo module

Fieldbus Workstation Configuration

- Endress & Hauser pressure transmitter
- FOUNDATION Fieldbus linking device

Dimensions (HART Workstation)

- Width: 32 in. (81 cm)
- Height: 26 in. (66 cm)
- Depth: 16 in. (41 cm)

Dimensions (Fieldbus Workstation)

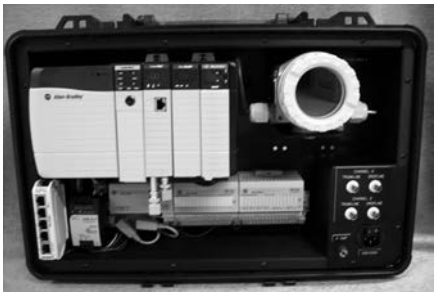
- Width: 19 in. (48 cm)
- Height: 14 in. (36 cm)
- Depth: 7 in. (18 cm)

Related Courses

- PRS013

Related Products

- *RSLogix 5000 and Logix500 Procedures Guide* (ABT-1756-TSJ50)



Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

PlantPAx Process System Workstation

Catalog #: ABT-TDPAX

Configuration

Major Control
- Redundant controller chassis
- Redundant Stratix 8000 switches
- 15 in. VersaView with touch screen

Major I/O Components
- Remote ControlLogix digital and HART I/O modules
- 3 simulated valves with open and closed feedback
- 7 hand switches
- 2 HART potentiometers
- 4…20 mA potentiometer
- 4…20 mA digital ammeter
- 24V DC motor with Hand/Off/Auto switch
- 3-color stack light
- Fluke 87 multimeter

Major MCC Components
- PowerFlex 40 drive
- E1 Plus overload relay with EtherNet/IP module
- Stratix 6000 switch
- 220V AC motor with hand brake
- 115V AC motor with hand brake and Hand/Off/Auto switch

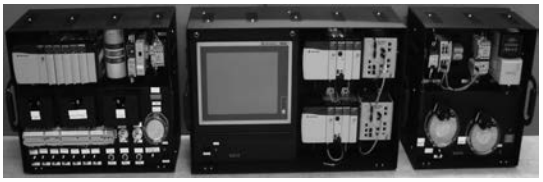
Dimensions

Control Workstation
- Width: 39 in. (97 cm)
- Height: 22 in. (56 cm)
- Depth: 14 in. (36 cm)

I/O Workstation
- Width: 29 in. (73 cm)
- Height: 22 in. (56 cm)
- Depth: 14 in. (36 cm)

MCC Workstation
- Width: 22 in. (55 cm)
- Height: 22 in. (56 cm)
- Depth: 14 in. (36 cm)

For the size of each shipping case, add 3 in. (8 cm) to width and depth and 8 in. (20 cm) to height.



Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Related Products

- *PlantPAx Process System Troubleshooting Guide* (ABT-P100-TSJ20)

Related Courses

- PRS013
- PRS015

PanelView 600 Workstation

Catalog #: ABT-TDPV600TC01

Configuration

- PanelView 600 terminal
- Keypad operation and touch operation
- Data Highway Plus
- Serial interface cable
- Hard-shell enclosure

Compatibility

The PanelView 600 Workstation can be used with the following workstations:
- ControlLogix (ABT-TDCLX2)
- 1746 I/O Rack System (ABT-TDSLC1)
- 1771 I/O Rack System (ABT-TDPLC1)

Dimensions

- Width: 12 in. (30 cm)
- Height: 8 in. (20 cm)
- Depth: 5 in. (13 cm)
- Weight: 5 lb (2 kg)

Related Courses

- CCP196
- CCPS45

Related Products

- *PanelView 300/550/600/900/1000/1400 and PanelBuilder32 Procedures Guide* (ABT-2711-TSJ50)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

PanelView 1000 Workstation

Catalog #: ABT-TDPV1000TC01

Configuration
- PanelView 1000 terminal
- Keypad and touch operation
- Data Highway Plus™ interface
- Serial interface cable
- Hard-shell enclosure

Compatibility
The PanelView 1000 Workstation can be used with the following workstations:
- ControlLogix (ABT-TDCLX2)
- 1746 I/O Rack System (ABT-TDSLC1)
- 1771 I/O Rack System (ABT-TDPLC1)

Dimensions
- Width: 17 in. (43 cm)
- Height: 12 in. (30 cm)
- Depth: 5 in. (13 cm)
- Weight: 9 lb (4 kg)

Related Courses
- CCP196

Related Products
- *PanelView 300/550/600/900/1000/1400 and PanelBuilder32 Procedures Guide* (ABT-2711-TSJ50)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

PanelView Plus Workstation

Catalog #: ABT-TDPVPLUSTC02

Configuration
- PanelView Plus terminal keypad and touch operation
- DH+, RIO, DH-485
- Serial Interface cable
- Hard-shell enclosure

Compatibility
The PanelView Plus Workstation can be used with the following workstations:
- ControlLogix (ABT-TDCLX2)
- 1746 I/O Rack System (ABT-TDSLC1)
- 1771 I/O Rack System (ABT-TDPLC1)

Dimensions
- Width: 13 in. (33 cm)
- Height: 10 in. (25 cm)
- Depth: 3 in. (8 cm)
- Weight: 6 lb (3 kg)

Related Courses
- CCV202
- CCV204

Related Products
- *FactoryTalk View ME and PanelView Plus Programming* (ABT-CCV204-TLB)
- *PanelView 300/550/600/900/1000/1400 and PanelBuilder32 Procedures Guide* (ABT-2711-TSJ50)

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Package Sorting Simulator

Catalog #: ABT-TDSORTERCLX
Catalog #: ABT-TDSORTERCMP
Catalog #: ABT-TDSORTER

Configuration
- 8 proximity switches
- 2 E-stop push buttons
- 2 start/stop push buttons
- 20 contacts for push buttons
- 1 encoder
- 1 encoder cable
- 1 encoder coupling
- 1 two-hole push button enclosures
- 1 three-hole push button enclosures
- 3 photo-eyes
- 1 selector switch
- Hard-shell enclosure

Dimensions
- Width: 40 in. (102 cm)
- Height: 18 in. (46 cm)
- Depth: 16 in. (41 cm)
- Weight: 125 lb (57 kg)

For the size of each shipping case, add 3 in. (8 cm) to width and depth, and 8 in. (20 cm) to height.

Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Conveyor Assembly Simulator (Lite)

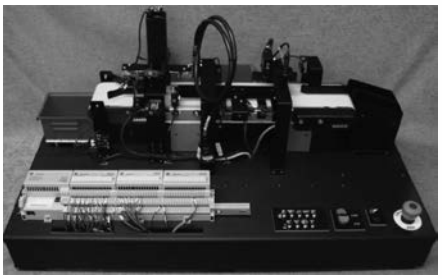
Catalog #: ABT-TDASTLITE

Configuration
- 2200 Series drive flat belt end drive
- Power supply 24…28V DC
- Flex I/O hardware:
  - 1 EtherNet adapter
  - 1 digital input module
  - 1 digital output module
  - 1 analog combo
- Push buttons:
  - 1 push-pull illuminated push button
  - 1 two-position momentary multifunction push button
- Switch and photo eye hardware:
  - 3 proximity sensors
  - 7 toggle switches, round actuator
  - 9 photo eyes
  - 1 two-position selector switch

Dimensions
- Width: 35 in. (88.9 cm)
- Height: 16.06 in. (40.7 cm)
- Depth: 20 in. (50.8 cm)
- Weight: 92 lb (41.7 kg)

For the size of each shipping case, add 3 in. (8 cm) to width and depth, and 8 in. (20 cm) to height.

Workstation Options
- Dual conveyor workstation with flex option (ABT-TDAST)
- Dual conveyor workstation with ControlLogix controller (ABT-TDASTCLX)
- Dual conveyor workstation with CompactLogix controller (ABT-TDASTCMPX)
- Single conveyor workstation with ControlLogix controller (ABT-TDASTLITECLX)
- Single conveyor workstation with CompactLogix controller (ABT-TDASTLITECMPX)



Lead Time = 7 weeks*

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Positioning Fault Simulator

Catalog #: ABT-TDPOSITION

Configuration
- 2 Kinetix 300 drives
- Flex I/O Hardware
  - 1 Ethernet adapter
  - 2 digital input module
  - 1 digital output module
- Switch and photo eye hardware
  - 6 proximity sensors
  - 5 photo sensors
  - 2 color sensors
- 1 vacuum pressure pump
- 1 encoder cable
- 20 fault simulations
- 2 actuators
- 4 puzzle graphics
- Plexiglass enclosed case

Dimensions
- Height: 23.9 in. (61 cm)
- Length: 44.1 in. (112 cm)
- Width: 28 in. (71 cm)
- Weight: 213 lb (97 kg)

For the size of each shipping case, add 3 in. (8 cm.) to the width and depth, and 8 in. (20 cm.) to the height.

Lead Time = 7 weeks*

Related Products
This simulator is available for stand-alone purchase. Combine this Positioning Fault Simulator with a control component (CompactLogix, ABT-TDIALITE) and develop a solid foundation of control and automation troubleshooting skills.

* Contact your local Rockwell Automation sales office or Allen-Bradley distrubutor to check availability for immediate shipment.

Savings and Flexibility - Training Savings Account

Do you have diverse employee development needs and want to maximize your training budget?

Our Training Savings Account maximizes your training budget by allowing you to deposit dollars into a dedicated account for future training expeditures. Use this account to purchase Rockwell Automation training products, courses, and e-Learning at a discount (20%). You can make withdrawals from your account as needed without any administrative hassle at the time that best meets the individual needs and schedule of each employee.

For more information, call 440-646-3434 (option 4), contact your local Rockwell Automation sales office or Allen-Bradley distributor, or visit:

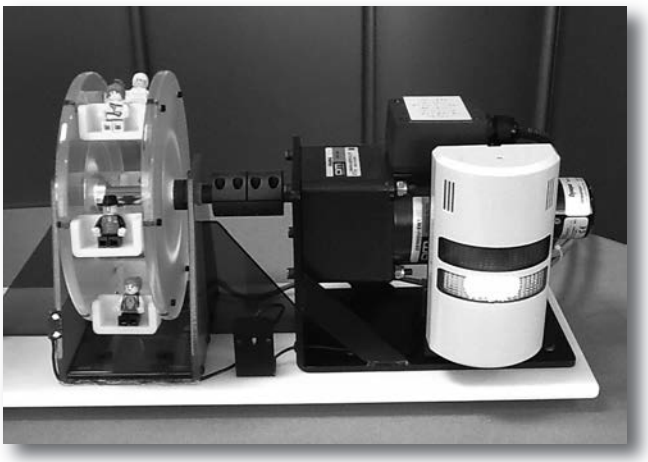
www.rockwellautomation.com/training

New Industrial Automation Curriculum and Workstation for Educational Institutions

Do you need an industry-recognized curriculum with cutting-edge lab equipment to build a foundation to help students succeed in technical industrial, engineering, or automation-related educational programs? Do your students have little or no experience with automation systems?

Rockwell Automation Training Services offers a new Industrial Automation curriculum package with a real-world and application-relevant lab workstation to help you achieve industry standards. These resources will help you stay ahead of the technology curve.

- **Automation Ferris Wheel Workstation** (ABT-TDFW100)
- **Introduction to Automation curriculum kit** (TCT-IA-TIP and TCT-IA-TSP)
- **AC and DC Drives curriculum kit** (TCT-ADD-TIP and TCT-ADD-TSP)



Engaging, Multimedia, Learning Environment
The new Industrial Automation curriculum and workstation offers a unique way to combine hands-on skills with interactive, media-rich technical content for an outstanding learning experience. The curriculum offers an introductory level of study, starting with basics of industrial automation, and builds to more advanced topics like AC and DC drives technology. Comprehensive student and instructor kits include engaging videos, animations, podcasts, and more.

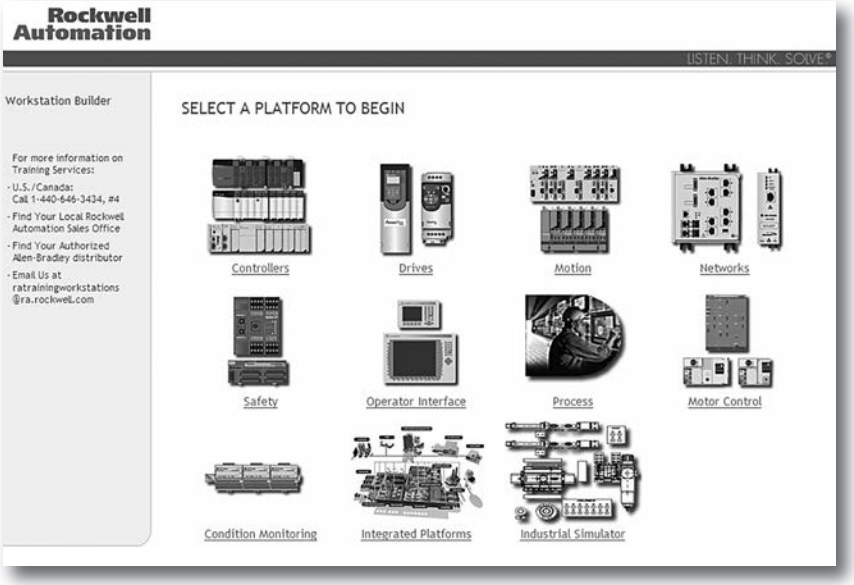
Interactive and Hands-On
The programmed workstation has a small, fully-functional Ferris wheel that allows students to operate and maintain an example automated system, yet also offers expanded capabilities to program your own operations and faults. The workstation is equipped with the latest Rockwell Automation and industry standard technologies, including a CompactLogix™ controller, PowerFlex® drive, HMI touchscreen and more.

To inquire about other Rockwell Automation college training kits and workstations contact your local Allen-Bradley Distributor or Rockwell Automation sales office, or call 440-646-3434, select option 4.

Workstation Builder

An easy way to design a workstation

Use the online Workstation Builder tool to customize a training workstation by selecting your own components, simulation, and accessories, and then submit the configuration to Rockwell Automation for a quote.



Features and capabilities with Workstation Builder:

- Graphical, step-by-step, component selection process
- Icon-driven navigation throughout the tool for ease of use
- Viewable progress summary of your selections
- Live chat, phone, and "contact us" links to obtain answers to your questions
- Online Help providing explanations on components and a link to technical product documentation in the Rockwell Automation Literature Library
- Links to special promotions, standard workstation offerings, and other training products and services
- Workstation recommendations and add-ons based on your configuration
- Printable summary of the configured workstation

Configure your ideal training workstation in four easy steps:

1. Select a platform
2. Select a model
3. Customize it
4. Print and submit for quote

Workstation Builder logically leads you step-by-step through several categories of components to customize your workstation. However, default selections are provided to identify Rockwell Automation standard recommendations. The graphical interface helps you easily identify workstation components.

Scan this code to visit Rockwell Automation Training Services and access Workstation Builder.

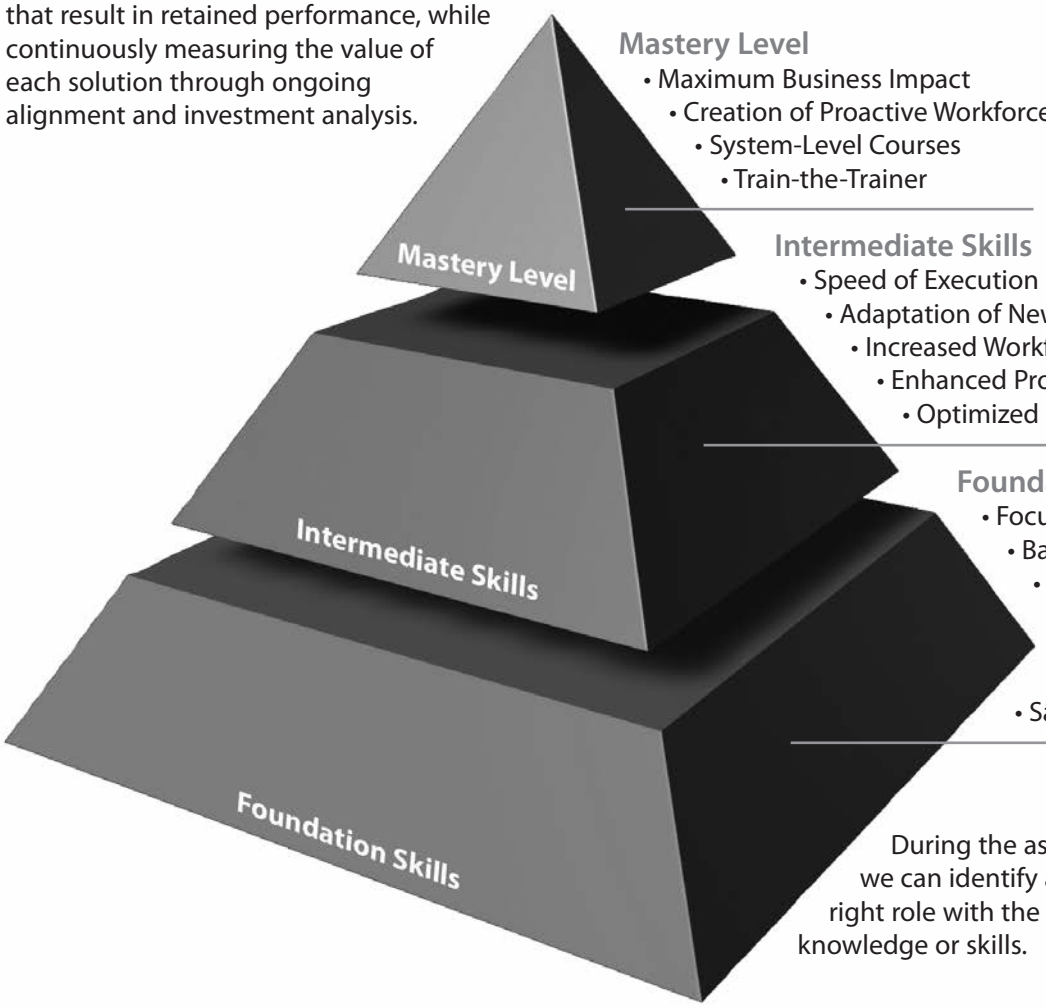
Global Workforce Solutions

Who We Are

Global Workforce Solutions collaborates with thought-leading companies focused on driving consistent global training programs and creating employee development roadmaps.

By partnering with our clients as their single source training provider, together we achieve consistent results in their electrical, mechanical, and automation controls training programs.

Global Workforce Solutions designs and implements future-proof, sustainable, flexible solutions that result in retained performance, while continuously measuring the value of each solution through ongoing alignment and investment analysis.



Mastery Level
- Maximum Business Impact
- Creation of Proactive Workforce
- System-Level Courses
- Train-the-Trainer

Intermediate Skills
- Speed of Execution
- Adaptation of New Technologies
- Increased Workforce Flexibility
- Enhanced Problem Solving
- Optimized Skills for First Responders

Foundation Skills
- Focus on Installed Base
- Baseline Skills
- Hands-on Experience
- Standard Operating Procedures
- Risk-free Practice
- Safety Compliant

During the assessment stage, we can identify and align the right role with the right set of knowledge or skills.

Custom Hands-on Courses • Native Language • Local Delivery
Time-Proven Methods of Learning Effectiveness • Factory Developed Instructors
Certificate Programs • Skills and Knowledge Assessments

Job Aids


RSTrainer
ControlNet™ Networks Troubleshooting Guide
RSLogix™ Guard PLUS Software Procedures Guide
ControlNet™ Networks Procedures Guide
RSTrainer
Rockwell Automation

Job Aids

Rockwell Automation recognizes that one of the keys to superior performance on-the-job is the ability to become efficient and highly effective using support resources. Rockwell Automation award-winning job aids provide essential job task information, thereby minimizing errors that can occur at the most inopportune moments. Job aids provide immediate hardware and software information when it is needed so production is not impacted. Our job aids are written at a level of detail to ensure that you are consistently using best practices. The right job aid can make the difference between productive time and downtime and between maximum performance and minimum operation.

Standard Guides

Standard job aids are designed to assist individuals with software and hardware job tasks. While these tools are very good at covering tasks associated with Rockwell Automation hardware components, they are not designed to take into consideration every possible custom system configuration or state.

Custom Guides

Custom guides are designed and developed to work with plant-specific systems and applications. Common operator-related hardware and software errors can be eliminated by using custom designed procedures and guides. Rockwell Automation can assist you with the design and creation of the guides you need to achieve maximum efficiency and minimize operator-related errors. Contact your local Rockwell Automation sales office or Allen-Bradley distributor to discuss creating custom guides for your needs.

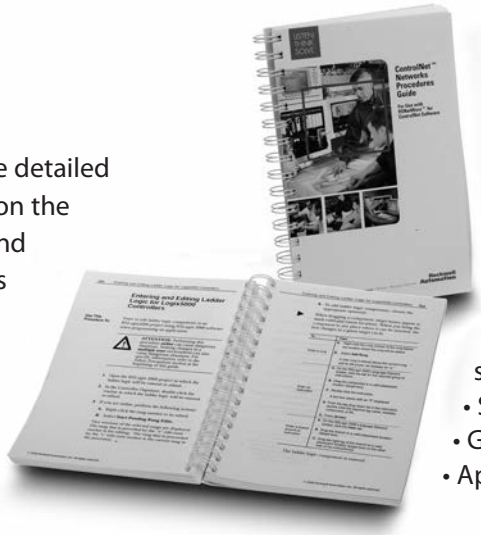
Glossaries

Glossaries provide an alphabetized listing of common terminology and definitions as it relates to a specific technology. Glossaries help users become more familiar with technical terms and concepts needed to understand a technology.

Job Aid	Catalog #
AC and DC Motor and Drive Glossary	ABT-D100-TSG10
Logix5000™ Systems Glossary	ABT-1756-TSG10
Motion Control Glossary	ABT-M100-TSG10

Procedures Guides

Procedures guides provide detailed step-by-step instructions on the most common software and hardware-related job tasks that help users to program, configure, troubleshoot, and test Rockwell Automation control equipment.



Features

- Step-by-step procedures for job-specific tasks
- Best practices and standard guidelines
- Tips on software-related shortcuts and special features
- Safety reminders and warnings
- Glossary of key software and hardware terms
- Appendices of basic Microsoft Windows operations

Job Aid	Catalog #
1395 Drive Installation Guide	ABT-1395-TSH50
ControlNet™ and RSNetWorx™ Procedures Guide	ABT-N200-TSJ50
ControlNet and RSNetWorx Procedures Guide - Portuguese	ABT-N200-TSJ50PT
ControlNet and RSNetWorx Procedures Guide - Spanish	ABT-N200-TSJ50ES
DeviceNet™ and RSNetWorx Procedures Guide	ABT-N100-TSJ50
DeviceNet and RSNetWorx Procedures Guide - German	ABT-N100-TSJ50DE
DriveExplorer™ Procedures Guide	ABT-D500-TSJ51
DriveTools™ Procedures Guide	ABT-D500-TSJ50
DriveTools Procedures Guide - Dutch	ABT-D500-TSJ50NL
EtherNet/IP Procedures Guide	ABT-N300-TSJ50
FactoryTalk® View ME and PanelView Plus Procedures Guide	ABT-2711P-TSJ50
FactoryTalk View ME and PanelView Plus Procedures Guide - Spanish	ABT-2711P-TSJ50ES
FactoryTalk View SE Procedures Guide	ABT-9701SE-TSJ50
FactoryTalk View SE Procedures Guide - Spanish	ABT-9701SE-TSJ50ES
GML™ and 1394 Procedures Guide	ABT-4100-TSJ50
GML Commander and 1394 Procedures Guide	ABT-4100-TSJ51
GML Commander and 1394 Procedures Guide - German	ABT-4100-TSJ51DE
GML Commander and 1394 Procedures Guide - Portuguese	ABT-4100-TSJ51PT
GML Commander and 1394 Procedures Guide - Spanish	ABT-4100-TSJ51ES
MicroLogix™ 1000 Procedures Guide	ABT-1761-TSJ50
PanelView™ 300/550/600/900/1000/1400 and PanelBuilder™32 Procedures Guide	ABT-2711-TSJ50
PanelView 1000e/1200e/1400e and Panel Builder 1400e Configuration Procedures Guide	ABT-2711E-TSJ50
PLC-2® and 6200 Series Procedures Guide	ABT-1772-TSJ80
PLC-5® and 6200 Series Procedures Guide	ABT-1785-TSJ50

Job Aid	Catalog #
PLC-5 and 6200 Series Procedures Guide - Spanish	ABT-1785-TSJ50ES
PLC-5 and A.I. Series Procedures Guide	ABT-1785-TSJ51
PLC-5 and A.I. Series Procedures Guide - Spanish	ABT-1785-TSJ51ES
ProcessLogix™ Configuration Procedures Guide	ABT-1757-TSJ50
ProcessLogix Operators Procedures Guide	ABT-1757-TSJ51
PowerFlex® 700 Standard and Vector Control Procedures Guide	ABT-20B-TSJ50
RSLogix 5 and PLC-5 Procedures Guide	ABT-1785-TSJ53
RSLogix 5 and PLC-5 Procedures Guide - French	ABT-1785-TSJ53FR
RSLogix 5 and PLC-5 Procedures Guide - Italian	ABT-1785-TSJ53IT
RSLogix 5 and PLC-5 Procedures Guide - Portuguese	ABT-1785-TSJ53PT
RSLogix 5 and PLC-5 Procedures Guide - Spanish	ABT-1785-TSJ53ES
RSLogix 500 and SLC™ 500 Procedures Guide	ABT-1747-TSJ52
RSLogix 500 and SLC 500 Procedures Guide - Dutch	ABT-1747-TSJ52NL
RSLogix 500 and SLC 500 Procedures Guide - Portuguese	ABT-1747-TSJ52PT
RSLogix 500 and SLC 500 Procedures Guide - Spanish	ABT-1747-TSJ52ES
RSLogix 5000 and Logix5000 Motion Control Procedures Guide	ABT-1756-TSJ52
RSLogix 5000 and Logix5000 Procedures Guide	ABT-1756-TSJ50
RSLogix 5000 and Logix5000 Procedures Guide - Italian	ABT-1756-TSJ50IT
RSLogix 5000 and Logix5000 Procedures Guide - Spanish	ABT-1756-TSJ50ES
RSLogix Guard PLUS and GuardPLC™ Procedures Guide	ABT-1753-TSJ50
RSView®32 Procedures Guide	ABT-9301-TSJ50
SLC 500 and A.I. Series Procedures Guide	ABT-1747-TSJ51
SLC 500 and APS Procedures Guide	ABT-1747-TSJ50
SoftLogix™ 5 Procedures Guide	ABT-1789-TSJ50
Ultra™ Master and 1398 Procedures Guide	ABT-1398-TSJ50
WINtelligent™ LOGIC 5 Procedures Guide	ABT-1785-TSJ52

Troubleshooting Guides

Rockwell Automation troubleshooting guides contain flowcharts that walk you through faults that can occur on a system. These guides are specifically designed for use on the plant floor and their pocket-size design allows for easy portability. Troubleshooting guides are filled with procedures, error code information, and status indicator listings with recommended actions, reference charts, and hardware/software diagrams.

Features

- Detailed illustrations with pertinent troubleshooting information
- Location indicators where action is needed or where possible problems exist
- Consistent starting point from which to logically begin troubleshooting
- Logical progression of questions, causes, and actions to determine the problem
- Important safety considerations, precautions, and general warnings

Job Aid	Catalog #
1336 PLUS™ II Troubleshooting Guide	ABT-1336F-TSJ20
1394 and GML Commander Troubleshooting Guide	ABT-1394-TSJ21
ControlLogix 1756-L7x and L6x Troubleshooting Guide	ABT-1756-TSJ20
ControlLogix and RSLogix 5000 Troubleshooting Guide - Spanish	ABT-1756-TSJ20ES
ControlNet and RSNetWorx Troubleshooting Guide	ABT-N200-TSJ20
ControlNet and RSNetWorx Troubleshooting Guide - Spanish	ABT-N200-TSJ20ES
DeviceNet and RSNetWorx Troubleshooting Guide	ABT-N100-TSJ20
DeviceNet and RSNetWorx Troubleshooting Guide - Spanish	ABT-N100-TSJ20ES

Job Aid	Catalog #
PlantPAx Process System Troubleshooting Guide	ABT-P100-TSJ20
PLC-5 and RSLogix 5 Troubleshooting Guide	ABT-1785-TSJ22
PLC-5 and RSLogix 5 Troubleshooting Guide - Portuguese	ABT-1785-TSJ22PT
PowerFlex 700 Standard and Vector Control Troubleshooting Guide	ABT-20B-TSJ20
SLC 500 and RSLogix 500 Troubleshooting Guide	ABT-1747-TSJ22
SLC 500 and RSLogix 500 Troubleshooting Guide - Dutch	ABT-1747-TSJ22NL
SLC 500 and RSLogix 500 Troubleshooting Guide - Spanish	ABT-1747-TSJ22ES

Documentation Reference Guide CDs

Documentation reference guide CDs contain excerpts of the most frequently used product information from several technical manuals. By consolidating technical product content on one CD, users can find important information faster.

Job Aid	Catalog #
1336 IMPACT™ Documentation Reference Guide CD	ABT-1336E-DRG70
1336 PLUS and PLUS II Documentation Reference Guide CD	ABT-1336SF-DRG70
1397 Drive Documentation Reference Guide CD	ABT-1397-DRG70
ControlNet Documentation Reference Guide CD	ABT-N200-DRG70
DeviceNet Documentation Reference Guide CD	ABT-N100-DRG70
EtherNet/IP Documentation Reference Guide CD	ABT-N300-DRG70
GuardLogix® Documentation Reference Guide CD	ABT-GRDLX-DRG70
GuardPLC™ Documentation Reference Guide CD	ABT-1753-DRG70
Logix5000™ Documentation Reference Guide CD	ABT-1756-DRG70
PLC-5 Documentation Reference Guide CD	ABT-1785-DRG70
PowerFlex DC Drives Documentation Reference Guide CD	ABT-20P-DRG70
PowerFlex 700S Documentation Reference Guide CD	ABT-20D-DRG70
PowerFlex 700S Phase II Documentation Reference Guide CD	ABT-20D-DRG71
PowerFlex 70 Standard and Vector Control Documentation Reference Guide CD	ABT-20A-DRG70
PowerFlex 700 Standard and Vector Control Documentation Reference Guide CD	ABT-20B-DRG70
PowerFlex 750-Series AC Drives Documentation Reference Guide CD	ABT-20G-DRG70
SLC 500 Documentation Reference Guide CD	ABT-1747-DRG70

Quick Reference Guides

Quick reference guides provide hardware and software specific information that users can quickly reference when configuring Rockwell Automation equipment. Parameter-specific information can typically be found in a quick reference guide.

Job Aid	Catalog #
1336 Drive Quick Reference Card	ABT-1336-TQR90
1336 IMPACT Quick Reference Guide	ABT-1336E-TQR90
1336 PLUS and PLUS II Quick Reference Guide	ABT-1336SF-TQR90
1336 PLUS Quick Reference Guide	ABT-1336S-TQR93
1397 Drives Quick Reference Guide	ABT-1397-TQR90
1397 Drives Documentation Reference Guide	ABT-1397-DR670
IMC 120, 121, 123 Quick Reference Guide	ABT-1771-TQR10
IMC-S Quick Reference Guide	ABT-4100-TQR10
PowerFlex 700 Standard and Vector Control Quick Reference Guide	ABT-20AB-TQR90
Ultra 100 Series Parameter Quick Reference Guide	ABT-1398-TQR90

Refresh

Improve Job Skills Through Self-Study

Self-Paced Learning

Do you find it difficult to schedule training for your staff? Are you trying to cut down on the additional expenses associated with training?

Delivered via the Web or CD-ROM, we have the e-Learning course for your needs. From basic industrial to Rockwell Automation specific content, the RSTrainer and Rockwell Automation University Online courses provide introductory and refresher training.

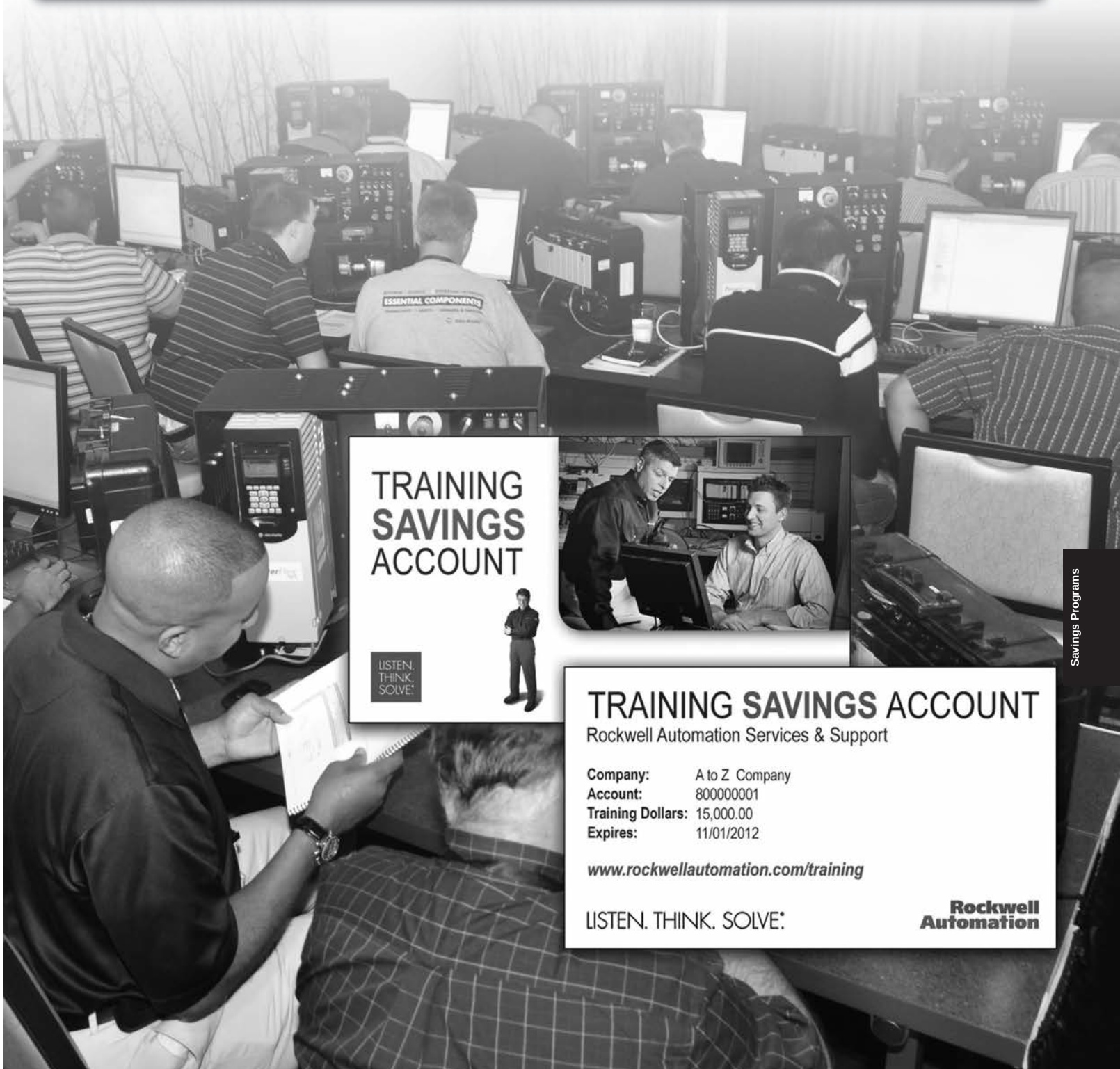
Courses are available in these areas:

- General Industrial
- Automation Fundamentals
- Controllers - ControlLogix, SLC, and PLC
- Communications
- Motion
- Visualization (Human Machine Interface)

To download a demo of computer-based training, go to: www.rockwellautomation.com/training

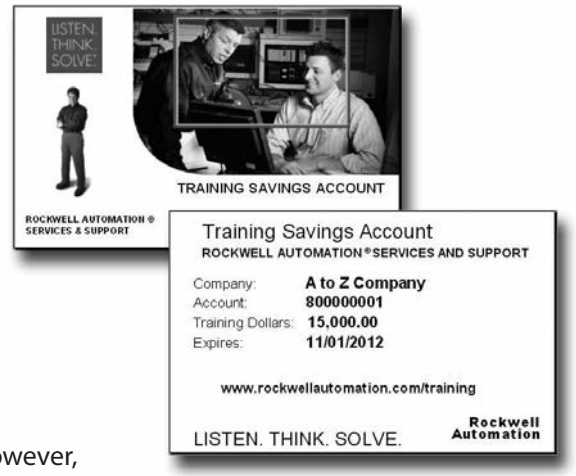
Sign up now for a free 5-day trial of our web-based training at: www.rockwellautomation.com/training

Savings Programs



Training Savings Account

Maximize Your Training Budget



The award-winning Rockwell Automation training portfolio provides a wide-range of performance-based products and services that can be purchased using your Training Savings Account. As a program participant, you receive a Training Savings Card with information on your total training dollars and account number. You can use your training dollars at any time within one year up to the expiration date on your account to purchase a variety of Rockwell Automation training courses, products, and services at a discount.

Any amount can be deposited in a Training Savings Account; however, the higher the account deposit level, the greater the savings.

Catalog Number	Deposit Requirement	Savings	Buying Power
	< $9,998	0%	Equal to Deposit
TrngSavings	$9,998 < 29,999	14%	$11,626 - $34,883
	$30,000 +	20%	$37,500+

Benefits:

- A single purchase for all your training needs
- Savings up to 20% off your purchase
- Monthly statements
- Easy budgeting and purchasing
- Redeemable for one year on any training offering

A Single Investment Redeemable For:

Instructor-Led Training

- **Standard Courses** - over 250 open-enrollment classes from our schedule
- **Tailored Courses** - combined lessons on job tasks from over 1600 learning modules
- **Custom Courses** - specifically designed to meet your training needs
- **On-site Courses** - private courses at your facility or another convenient location
- **Virtual Classroom** - instructor-led training via your computer
- **Certification Program** - curriculum to demonstrate mastery of Rockwell Automation technologies

Self-Paced Training: e-Learning

- **Computer-Based Training** - RSTrainer Series
- **Web-Based Training** - Rockwell Automation University Online

Workstations

- Skill-building learning units for many Rockwell Automation technologies

Job Aids

- Troubleshooting Guides
- Procedure Guides
- Quick Reference Guides
- Documentation Reference Guide CDs

Assessment Services

- **Training Advisor** - online knowledge assessment tool
- **Assessment** - gap analysis, reporting, integrated performance assessment and employee development recommendations

Note: Special rules apply for volume discounts, sales promotions, previously discounted items, and custom/negotiated training.

Fundamentals Training + One

Attend a Rockwell Automation Fundamentals class and receive a discount on your next training class!

Fundamentals Training + One is a great way to extend your learning experience beyond just the basics and save money in the process. Enroll in any Rockwell Automation Fundamentals class and receive a discount on your second class.

After attending a Fundamentals class, you have thirty days to enroll in a second class to receive the discount.

Rockwell Automation will automatically reduce your second class tuition by 20% off the list price.

Create a Complete Training Plan with Rockwell Automation Curriculum Maps

While Fundamentals + One provides a great foundation to obtain the latest technical knowledge, you need a comprehensive training plan to achieve true domain expertise.

Rockwell Automation curriculum maps will help you determine the best overall training path for a specific technology or industry. A sample curriculum map for ControlLogix/RSLogix 5000 is shown below.

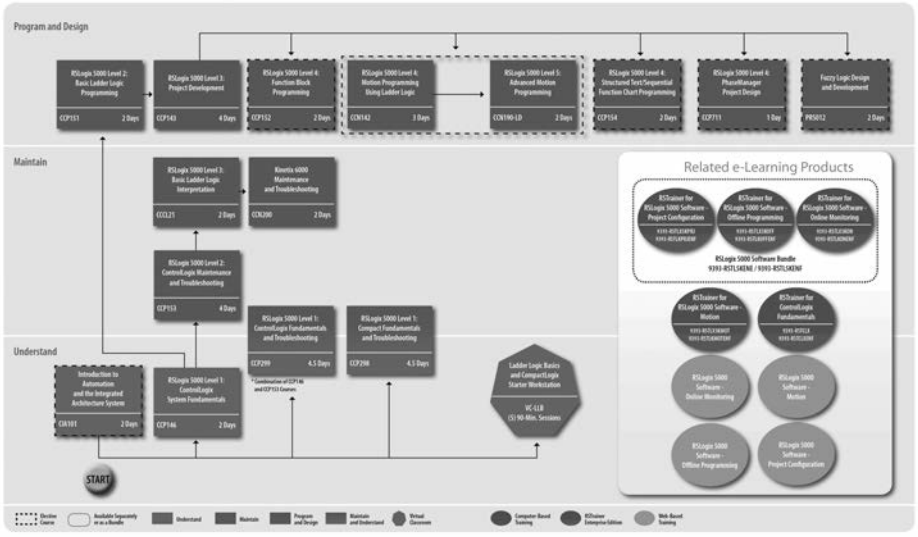
To view all curriculum maps online, see the Rockwell Automation Training Services website: www.rockwellautomation.com/training

How to Enroll

To Enroll in a Rockwell Automation training class, contact an authorized Allen-Bradley Distributor, a Rockwell Automation local Sales/Support office, or call (440) 646-3434, select option 4 and mention Promotion Code TAS0702.

This offer is not valid with other promotions.

ControlLogix/RSLogix 5000 Curriculum Map



Savings Programs

Training + Starter Workstation with "Build Your Own" Workstation Option

Attend ControlLogix courses and maintain your skills with our Starter Workstation

Take Your Classroom Training Back to Your Job

Six Rockwell Automation ControlLogix courses are bundled with a CompactLogix Starter Workstation to provide an opportunity for ongoing practice. This offer is optional; however, the CompactLogix Starter Workstation allows you to reinforce the skills acquired from any of the ControlLogix training classes. With this offer you can elect to "build your own" starter workstation or receive a pre-assembled workstation.

The workstation can be used for:
- Providing opportunities for realistic and safe practice
- Refreshing skills
- Reinforcing and practicing maintenance and troubleshooting skills

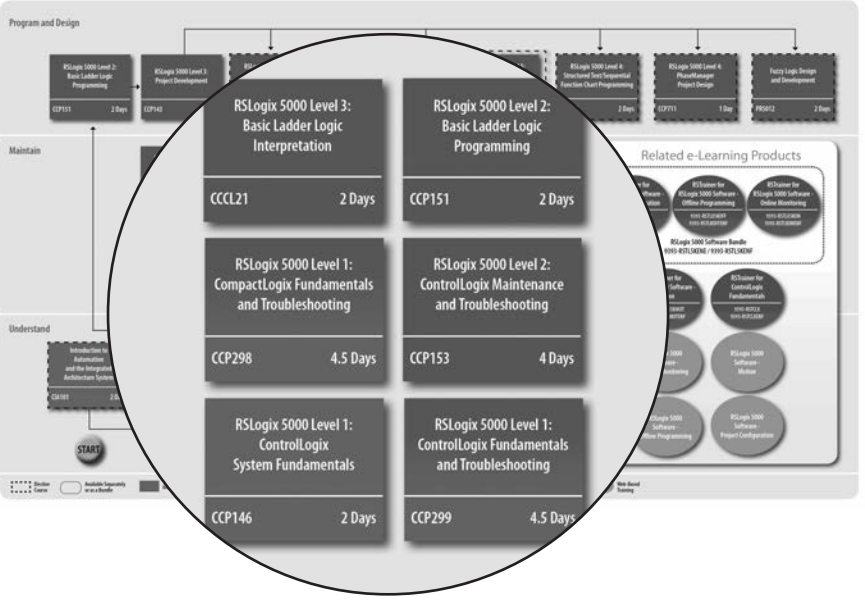
For a schedule of ControlLogix classes in your area and detailed course descriptions, go to: www.rockwellautomation.com/training

CompactLogix Starter Workstation
Your CompactLogix Starter Workstation will include the following:
- Assembled workstation or a "build-your-own" workstation that includes a kit and an instruction guide
- 1 CompactLogix L31 processor (512K memory) or 1 CompactLogix L35E Ethernet processor (1.5MB memory)
- 1 CompactLogix AC power supply
- 1 Digital combo, 6 digital in/ 4 digital out
- 4 momentary push buttons
- 2 selector switches
- 1 Compactbus end cap
- 1 serial port programming cable
- AmeriPak shipping case

Note: Software is not included with the starter workstation.

Dimensions
- Width: 14 in. (36 cm)
- Height: 10 in. (25 cm)
- Depth: 6 in. (15 cm)
- Weight: 15 lb (7 kg)

ControlLogix/RSLogix 5000 Curriculum Map



ControlLogix Courses		Starter Workstation		Catalog Number
RSLogix 5000 Level I ControlLogix System Fundamentals — **2 Days**	RSLogix 5000 Level 1: ControlLogix System Fundamentals	CompactLogix Starter Workstation with Ethernet	Assembled Build Your Own	CCP146E CCP146EB
		CompactLogix Starter Workstation	Assembled Build Your Own	CCP146W CCP146WB
RSLogix 5000 Level I ControlLogix Fundamentals and Troubleshooting — **4.5 Days**	RSLogix 5000 Level 1: ControlLogix Fundamentals and Troubleshooting	CompactLogix Starter Workstation with Ethernet	Assembled Build Your Own	CCP299E CCP299EB
		CompactLogix Starter Workstation	Assembled Build Your Own	CCP299W CCP299WB
RSLogix 5000 Level I CompactLogix Fundamentals and Troubleshooting — **4.5 Days**	RSLogix 5000 Level 1: CompactLogix Fundamentals and Troubleshooting	CompactLogix Starter Workstation with Ethernet	Assembled Build Your Own	CCP298E CCP298EB
		CompactLogix Starter Workstation	Assembled Build Your Own	CCP298W CCP298WB
RSLogix 5000 Level 3: Basic Ladder Logic Interpretation — **2 Days**	RSLogix 5000 Level 3: Basic Ladder Logic Interpretation	CompactLogix Starter Workstation with Ethernet	Assembled Build Your Own	CCCL21E CCCL21EB
		CompactLogix Starter Workstation	Assembled Build Your Own	CCCL21W CCCL21WB
RSLogix 5000 Level 2: Basic Ladder Logic Programming — **2 Days**	RSLogix 5000 Level 2: Basic Ladder Logic Programming	CompactLogix Starter Workstation with Ethernet	Assembled Build Your Own	CCP151E CCP151EB
		CompactLogix Starter Workstation	Assembled Build Your Own	CCP151W CCP151WB
RSLogix 5000 Level 2: ControlLogix Maintenance and Troubleshooting — **4 Days**	RSLogix 5000 Level 2: ControlLogix Maintenance and Troubleshooting	CompactLogix Starter Workstation with Ethernet	Assembled Build Your Own	CCP153E CCP153EB
		CompactLogix Starter Workstation	Assembled Build Your Own	CCP153W CCP153WB

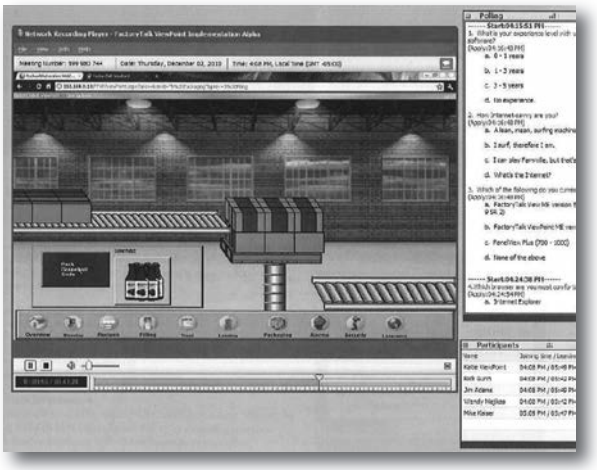
To enroll in a Rockwell Automation training class: Contact an authorized Allen-Bradley Distributor, a Rockwell Automation local Sales/Support office or call (440) 646-3434, select option 4. For more information about ControlLogix courses and other training products and services, visit http://www.rockwellautomation.com/training.

Take Advantage of Rockwell Automation Self-Paced Training with these Special Offers

Web-Based Training

With the purchase of Web-based Training ePasses, your benefits include:

- Significant cost savings when purchasing a 20, 50, or 100 pack of ePasses
- Easy budgeting and purchasing with package offerings
- Easy redemption because only one ePass is needed to activate a single course - every course is priced the same
- Unlimited refresher training opportunities for one year from the time of purchase — you can repeat courses as many times as needed without using additional ePasses!



Pricing Information

One ePass is needed to activate a single web-based training course from Rockwell Automation University Online. ePasses are valid for one year from the date of purchase.

Product Description	Catalog #	Approximate Savings
Web-based Training Single ePass	WBT-1PACK	–
Web-Based Training 5 Pack	WBT-5PACK	–
Web-Based Training 20 Pack	WBT-20PACK	22%
Web-Based Training 50 Pack	WBT-50PACK	34%
Web-Based Training 100 Pack	WBT-100PACK	42%

Computer-Based Training

Web-only offer:
Save 25% on two or more RSTrainer computer-based training courses. To qualify, your order must be submitted online. This offer excludes RSTrainer bundles and RSCompanion.

Computer-based Bundles
Save with the purchase of a series of CBT courses:

Computer-based Training	Catalog #
RSTrainer for EtherNet/IP Bundle (Includes 2 EtherNet/IP CBTs)	9393-RSTENETAENE
RSTrainer Enterprise Edition for EtherNet/IP Bundle (Includes 2 EtherNet/IP CBTs)	9393-RSTENETAENF
RSTrainer for RSLogix 5000 Software Bundle (Includes 3 RSLogix 5000 CBTs)	9393-RSTL5KENE
RSTrainer Enterprise Edition for RSLogix 5000 Bundle (Includes 3 RSLogix 5000 CBTs)	9393-RSTL5KENF
RSTrainer for SLC 500 Fundamentals Bundle (Includes 2 SLC 500 CBTs)	9393-RSTSLCALENE
RSTrainer Enterprise Edition for SLC 500 Fundamentals Bundle (Includes 2 SLC 500 CBTs)	9393-RSTSLCALENF
RSTrainer for RSLogix 500 Software Bundle (Includes 3 RSLogix 500 CBTs)	9393-RST500ALENE
RSTrainer Enterprise Edition for RSLogix 500 Software Bundle (Includes 3 RSLogix 500 CBTs)	9393-RST500ALENF
RSTrainer for FactoryTalk View Machine Edition Bundle (Includes 3 FactoryTalk View ME CBTs)	9393-RSTVMEALL
RSTrainer Enterprise Edition for FactoryTalk View Machine Edition Bundle (Includes 3 FactoryTalk View ME CBTs)	9393-RSTMEALLENF

LISTEN.
THINK.
SOLVE.®

Training Services

Don't Delay Getting the Training You Need. Enroll Now!

Call 440-646-3434
(option 4)

E-mail training requests to:
trainingservices@ra.rockwell.com

To view course schedules, go to:
www.rockwellautomation.com/training

Certificate Programs

Certificate Program

ControlLogix and Drives Certificate Programs

Apply ControlLogix and Drives technology to help improve the quality, efficiency, and productivity of your plant systems.

The ControlLogix and Drives Certificate Programs are intended for maintenance and programming professionals who want to develop their knowledge and skills using the latest technology. This program combines a number of up-to-date training courses.

You can choose to complete one or both of the Certificate Programs. As a certificate candidate, you will follow a series of Rockwell Automation training courses offering practical, hands-on exercises and take a final assessment. Participants will be trained on ControlLogix or Drives skills and competencies, they will understand theoretical concepts, and learn to maintain and/or program ControlLogix or Drives equipment. Depending on the combination of training courses followed, it will lead you to the desired level and type of certificate.

Upon completion of the program requirements, please contact your local Rockwell Automation training coordinator to review your training record. Once approved, you can enroll for the assessment through your local Allen-Bradley distributor or Rockwell Automation training coordinator. You will be given access to the online, web-based assessment (fee requirement), the final step leading to your Certificate of Achievement. A passing score on the assessment will entitle you to the rewards and benefits of the Certificate Program you completed.

Program Rewards

- Recognition Award - Certificate of Achievement
- Custom Rockwell Automation polo shirt with certificate logo

Program Value-Add

- Job aids
- Continuing education units
- Tools to maintain skills and knowledge:
  - CompactLogix starter workstation (available with specific ControlLogix courses)
  - e-Learning discount coupon (available with ControlLogix certificate program course only)
  - ControlLogix or Drives training discount coupon

Benefits

- Competency
- Recognition
- Knowledge assessment
- Competitive edge
- Education credits
- Improved on-the-job skills

Declare yourself a certificate candidate at our Training Services website and receive a schedule of courses in your area and a Rockwell Automation hat. You will also receive a study guide at the time you enroll for the final assessment.

www.rockwellautomation.com/training

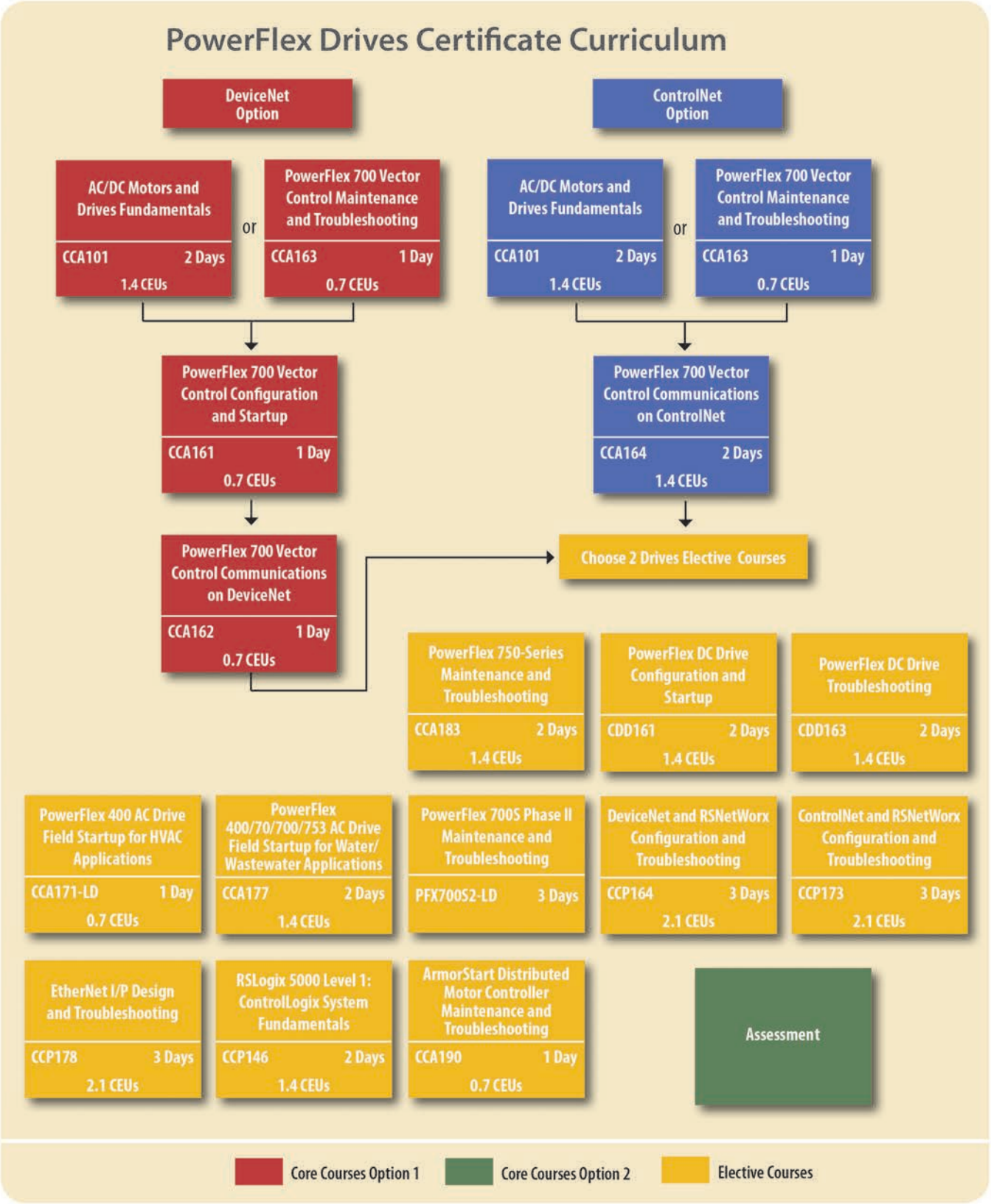
ControlLogix Programmer Certificate Curriculum

Core Courses

Elective Courses (Choose 1 Course)

Core Courses	Elective Courses (Choose 1 Course)	
RSLogix 5000 Level 1: ControlLogix System Fundamentals CCP146 — 2 Days — 1.4 CEUs	RSLogix 5000 Level 1: ControlLogix Fundamentals and Troubleshooting CCP299 — 4.5 Days — 3.2 CEUs	Introduction to Automation and the Integrated Architecture System CIA101 — 2 Days — 1.4 CEUs
RSLogix 5000 Level 2: Basic Ladder Logic Programming CCP151 — 2 Days — 1.4 CEUs	RSLogix 5000 Level 4: PhaseManager Project Design CCP711 — 1 Day — .7 CEUs	GuardLogix Application Development SAF-LOG101 — 2 Days — 1.4 CEUs
RSLogix 5000 Level 3: Project Development CCP143 — 4 Days — 2.8 CEUs	Motion Control Fundamentals CCN130 — 2 Days — 1.4 CEUs	RSLogix 5000 Level 4: Function Block Programming CCP152 — 2 Days — 1.4 CEUs
Choose 1 ControlLogix Elective Course	RSLogix 5000 Level 4: Motion Programming Using Ladder logic CCN142 — 3 Days — 2.1 CEUs	RSLogix 5000 Level 4: Structured Text/ Sequential Function Chart Programming CCP154 — 2 Days — 1.4 CEUs
Assessment	RSLogix 5000 Level 5: Advanced Motion Programming CCN190-LD — 2 Days — 1.4 CEUs	Note: CCP146 or CCP299 may be replaced with CIA101 if you have already completed the Fundamentals course. No other substitutions are permitted.

Core Courses Elective Courses



Certification Program

Vibration Analysis Certification Options

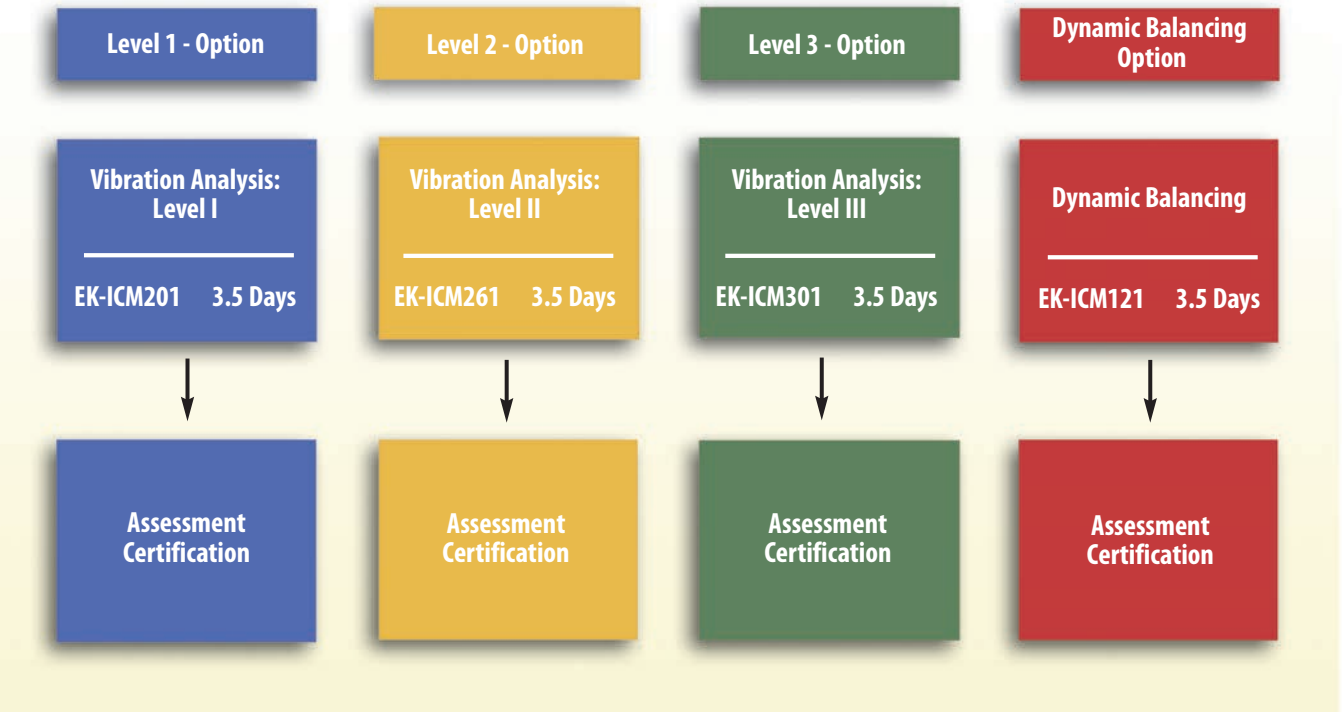
Vibration analysis courses provide professional education and certification to help you implement and operate a successful predictive maintenance program. Courses are intended for mechanics, technicians, engineers or analysts involved in the maintenance or operation of plant machinery. Course completion and the certification exam procedure allow individuals to receive certified recognition for the expertise achieved in either Vibration Analysis Level I, Level II, Level III, or Dynamic Balancing areas.

To obtain certification in Vibration Analysis or Dynamic Balancing, call your local Allen-Bradley distributor to enroll in one of the following courses. The certification test is administered during the last half day of the course (fee requirement).

Benefits

- Competency
- Recognition
- Knowledge assessment
- Competitive edge
- Improved on-the-job skills

Vibration Analysis Certificate Curriculum



Certificate Program

TÜV Functional Safety Certification

New standards regarding Functional Safety and relevant laws and directives demand that people and organizations perform responsible and accountable tasks during all life cycle phases of a machine and they have to achieve and prove required competencies. Within this program, the defined requirements regarding the design and the proof of functional safety of machines in respect to the current standards and guidelines are covered in detail.

Examples from practice will demonstrate possibilities regarding machine protection. The participant will learn how safety devices and safety components are assembled and applied to reduce hazards from machinery so the necessary safety for people and the environment is guaranteed. In addition to the technical requirements, information about organizational measures and quality assurance and documentation for the life cycle design and validation will be passed on.

Classroom instruction provides detailed information, examples, and discussions for understanding and mastering the requirements of EN/IEC 62061, EN/ISO 12100, EN/ISO 13849-1, -2, EN/IEC 60204, IEC 61508-part 1 to part 7 and other relevant machine functional safety standards.

Rockwell Automation offers this certification program in cooperation with TÜV Rheinland.

Certification Requirements

To successfully complete this certification program, the following requirements must be met:

- Minimum of 3-5 years of professional experience in the field of Functional Safety.
- University engineering degree (bachelor's or master's) or equivalent engineer level responsibilities and status certified by employer.
- Completion of eligibility form from Rockwell Automation/TÜV Rheinland
- Recommended completion of the *TÜV Functional Safety Introduction* course (SAF-TUV1). Refer to the Safety section of this catalog for course description information.
- Completion of the *TÜV Functional Safety Certification* course (SAF-TUV2). Refer to the Safety section of this catalog for course description information.
- Successful completion of the certification exam with a passing score.

Enrollment

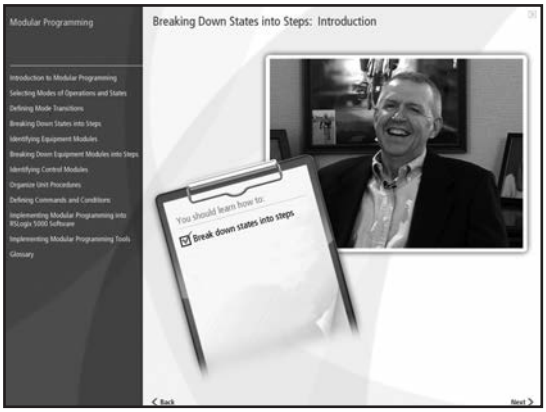
To obtain TÜV Functional Safety certification, call your local Allen-Bradley distributor to enroll in the SAF-TUV1 and SAF-TUV2 courses. The certification exam is administered during the last day of the course. This training can also be completed, however, without the exam.

Self-Paced Course!

Modular Programming for Machine Applications

In this self-paced course, you are guided by a technical expert who will provide you with knowledge to produce a software design specification for a machine or line of machines. The specification will follow modular programming guidelines and you will follow the technical expert through video and audio instructions.

By using a modular approach to your software design, your software becomes much easier to reuse from project to project. As your base of modular code increases, your development time decreases. And, the quality of the code increases each time you refine and re-use it.



Student kit includes:
- Training DVD
- Modular programming design guide
- PackML state model worksheet
- Related job aids and technical documentation on disk to assist you with modular programming

To purchase: Catalog #9393-MODPROG
Contact your local Allen-Bradley distributor or Rockwell Automation sales office, or call 440-646-3434 (option 4).

Assessment Services

Integrated Performance Assessment

How do you determine workforce readiness for new technology?

What refresher training does your workforce need?

How can you determine and address skill gaps?

When you schedule an on-site assessment, a Rockwell Automation training analyst visits your facility to evaluate your employees' skills and knowledge of automation and control equipment for specific jobs and tasks (maintenance, programming, etc.). Rockwell Automation provides you with supporting information and recommendations to improve employee performance while remaining closely aligned to your company's business goals.

Deliverables

Rockwell Automation provides a written report that offers these specific deliverables:

- Detailed job task analysis
- Skill gap identification
- In-depth assessment of employee training needs
- Customized curriculum map and course descriptions (for your group of employees)
- Training implementation recommendations
- Training prioritization and rankings
- Job performance support tools
- ROI forecasts

To start an Integrated Performance Assessment, contact your local Rockwell Automation sales office or Allen-Bradley distributor.

Value Where It Counts

Rockwell Automation Integrated Performance Assessments can help boost plant productivity, positively impact plant metrics, and reduce total training time and cost by focusing your workforce training investment where it counts – on specific performance improvement and job requirements. It is the most systematic and comprehensive consulting service available in the industry.

Our process is comprehensive:

1. Your employees participate in one-on-one interviews with the training analyst to discuss training needs.
2. Your employees complete a skills assessment related to their specific job tasks.
3. The Rockwell Automation training analyst interviews direct supervisors and managers to clarify and enhance data collected during the assessment.
4. Rockwell Automation analyst presents the results and submits a written report summarizing the findings and recommendations for training.

Training Advisor

Unlock improved job performance potential with the Rockwell Automation online knowledge assessment tool.

Training Advisor helps you determine a custom training path for your workforce to obtain the knowledge required to successfully improve on-the-job performance.

Training Advisor helps you identify skill and knowledge gaps hindering production performance and develop a training strategy that will maximize job performance and effectiveness.

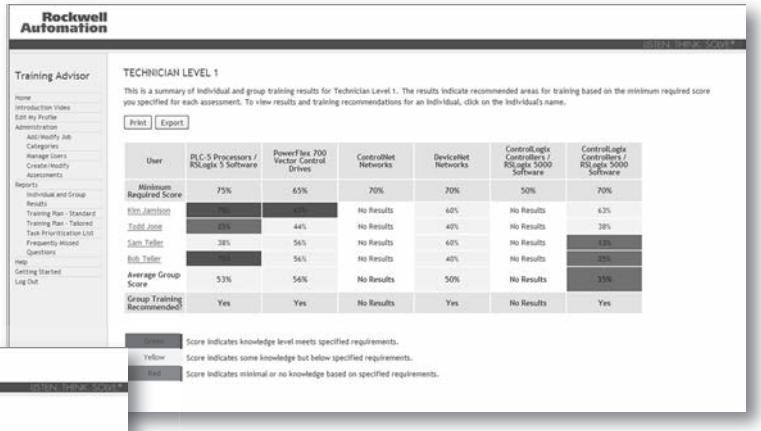
Training Advisor offers you the ability to customize online assessments in the following areas based on job tasks that your workforce performs:

- Controllers
- Networks
- Motion Control
- Drives Control
- Safety
- Visualization
- Process Control
- General Industrial (Electrical and Pneumatic) Control

Benefits

Experience the many benefits of Training Advisor:

- Customize knowledge assessments based on specific equipment and job tasks
- Capture a snapshot of current knowledge levels prior to investing in training
- Create individual and group training plans
- Prioritize training based on your installed equipment, job tasks, and the training needs identified from knowledge assessment(s)
- Eliminate unnecessary expenses of training your workforce
- Justify training costs that will help improve production performance



Scan this code to visit Rockwell Automation Training Services and view a demo of Training Advisor.

Pre- and Posttest Assessments

Allow us to demonstrate the value of our Training Solutions!

Free Service with On-Site Training

Rockwell Automation offers pre- and posttest assessments with all standard, on-site, training courses. Pre- and posttests are value-added assessments used to measure students' knowledge at the beginning and end of training.

Measurable Value

Our pre- and posttest services provide you with a measurable return on your training investment by capturing data that quantifies students' knowledge increase as a result of completing Rockwell Automation training.

Training Justification

If you are not certain your employees need a particular course, allow Rockwell Automation to administer a pretest assessment. The results can help you determine whether your employees will benefit from the training.

Benefits

- Measures students' knowledge
- Provides quantitative training data
- Offers students constructive feedback on technical skills and knowledge at the beginning and end of class
- Offers a benchmark against which to measure growth and training value-add

Course Selection Tool

Not sure if a course is right for you?

The Rockwell Automation Course Selection Tool helps you answer this question and make confident decisions about enrolling in Rockwell Automation training courses.

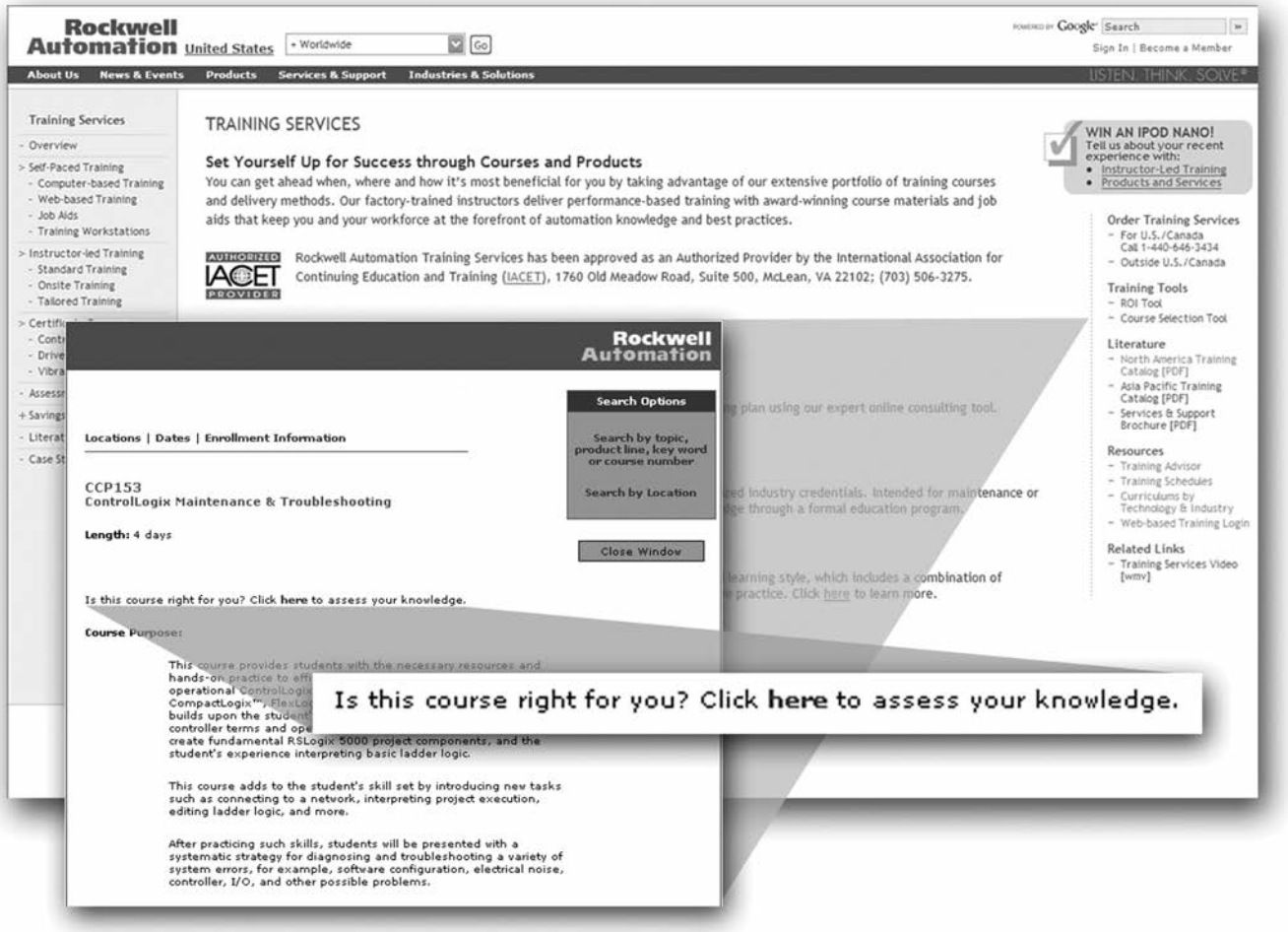
The Course Selection Tool offers you **free** short course assessments used to measure your knowledge of technical topics covered in Rockwell Automation training courses. Results from the assessments help you determine whether you should enroll in a course or consider enrolling in another course that will better meet your skill and knowledge needs. All course assessments are **free** and results are kept confidential.

If you are looking for justification or confirmation that Rockwell Automation training is necessary, then the Course Selection Tool is an invaluable resource. Access the Course Selection Tool at:

www.rockwellautomation.com/training

Assessments are available for courses in these technologies:

- Programmable controllers
- Drives
- Visualization
- Condition monitoring



The Rockwell Automation Difference

Award-Winning, Performance-Based Training

Your employees are your greatest asset. To achieve peak manufacturing performance, you need technologies and processes driven by highly trained employees. Ongoing training is an important component of a strategic approach to maintenance, and constantly improving human and process performance consistently translates into increased job productivity and overall plant profitability. Skilled operators, maintenance personnel, and engineers, who maximize machinery and processes, should increase the availability, rate, and quality of your production environment and boost your Overall Equipment Effectiveness (OEE).

Rockwell Automation Offers the Following Instructor-Led Training Options:

Standard Open Enrollment Courses
Over 250 are available to help you utilize all capabilities of Rockwell Automation technologies. Classes are designed for specific job functions and focus on the tasks to be performed to do a particular job. Found on the national schedule, these classes are conducted at Rockwell Automation and partner locations.

Tailored Training Courses
Developed in a modular format you can build a specific course based on job tasks pertinent to your products and job functions. Select lessons from our standard courses to create a unique course for your training needs. Tailored Training creates a course tailored to your hardware or software requirements. Whether introductory, prerequisite, refresher or mastery level courses, you can select from more than 1,600 job task related lessons.

Custom Courses
Often, customers have a unique need and require custom training courses. Rockwell Automation is expert in delivering custom training that meets your specifications and uses your applications throughout the content. A Rockwell Automation specialized course can be designed to meet your employees' needs and delivered with your automation equipment, software, and system configuration incorporated into the course. This highly effective training solution is often required for your critical plant areas or applications.

On-site and Private Training Courses
Any instructor-led course can be conducted on-site, at your plant or private location, with the convenience and savings of not having to travel. In addition, our free pre- and posttest services are only available with on-site courses. They benchmark an incoming student's knowledge and measure the knowledge transfer after training. The data captured from pre- and posttests enables you to examine your ROI and justify your investment. Classes, with a minimum of eight attendees, can be made private and include only the students you want to train.

Embedded Instructors
In large production environments with ongoing and diverse professional development needs, special arrangements can be made for an embedded Rockwell Automation instructor to meet continuous on-site employee development needs. These professionals deliver standard and tailored courses, as well as develop custom materials for courses. The level of immediacy and responsiveness associated with your own in-house trainer is unparalleled.

Virtual Classroom
Rockwell Automation now offers interactive Virtual Classroom training, which are short, one- or two-hour training sessions conducted by a knowledgeable instructor via the Internet.

Enrollment

Fax: Send Training Enrollment Form to your local Allen-Bradley distributor or Rockwell Automation Training office

Email: Send Training Enrollment Form to: trainingservices@ra.rockwell.com

Rockwell Automation

Training Enrollment Form

Customer Information

print clearly!

Payment Option (Circle One):
Purchase Order | Check | Training Savings Account

Payment Reference Number:
(corresponds to the Payment Option selected)

Date:

First Name: Last Name: Middle Initial:

Title/Position:

Company:

Company Address:

City: State/Province: Zip Code:

Telephone Number: Fax Number: E-Mail Address:

(Please complete, if other than course attendee)

Contact Name: Telephone Number: Fax Number:

Course Information

Course Code	Course Title	Course Date	Course Location/City

Distributor Information

For Distributor Use Only

Distributor's Purchase Order Number: Contact Name:

Distributor Name & Address:

Distributor Telephone Number: Distributor Fax Number:

Distributor Business Partner ID Number: Customer Business Partner ID Number:

Terms and Conditions For Rockwell Automation Training Services:

- Payment must be secured by one of the above methods before enrollment can be confirmed.
- If paying by purchase order, credit card, or check, please register through your local Allen-Bradley distributor.
- Registration cancellation less than 14 days prior to the course start date is subject to a fee equal to 50% of the course tuition.
- Rockwell Automation strongly suggests that you only make "refundable" travel & lodging arrangements.
- Rockwell Automation reserves the right to alter course schedules, content, limit class size, reschedule, discontinue, or cancel courses.

E-mail or fax this form to your local authorized distributor to register. Call (440) 646-3434 (option 4) or email trainingservices@ra.rockwell.com with questions.

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Trademark List

Rockwell Automation Services & Support

Global Support. Local Address. Peace of Mind.

Providing the resources you need, when and where you need them, Rockwell Automation has an integrated, global network of ISO-certified repair centers, exchange hubs, field service professionals, IACET-recognized training centers, certified technical phone support centers and online tools.

www.rockwellautomation.com/services

Meet Your Everyday Technical Needs

Online & Phone Support	Training Services	OnSite Services	Repair Services
• System-level support • Unlimited, real-time support • Unlimited, online resources and tools • Live chat and support forums	• Instructor-led and computer or web-based courses • Virtual classroom • Training assessments • Workstations and job aids	• Embedded engineering • Preventive maintenance • Migrations and conversions • Start-up and commissioning	• Product remanufacturing • Repair services on non-Rockwell Automation brands • Annual repair agreements

Maximize Your Automation Investment

MRO Asset Management	Lifecycle Extension & Migrations	Network & Security Services	Safety Services
• Comprehensive asset management planning • Reliability solutions • Warranty tracking • Quick access to global spare parts inventory	• Installed Base Evaluation™ • Pinpoint obsolescence risk • Tools and Lifecycle support service agreements to mitigate production risk	• Control system lifecycle services • Manage network convergence Security technology, policies and procedures services	• Safety assessments and remediation • Safety design, integration and validation services

Visit the Rockwell Automation Support Center, http://rockwellautomation.custhelp.com/ for technical information and assistance, plus:

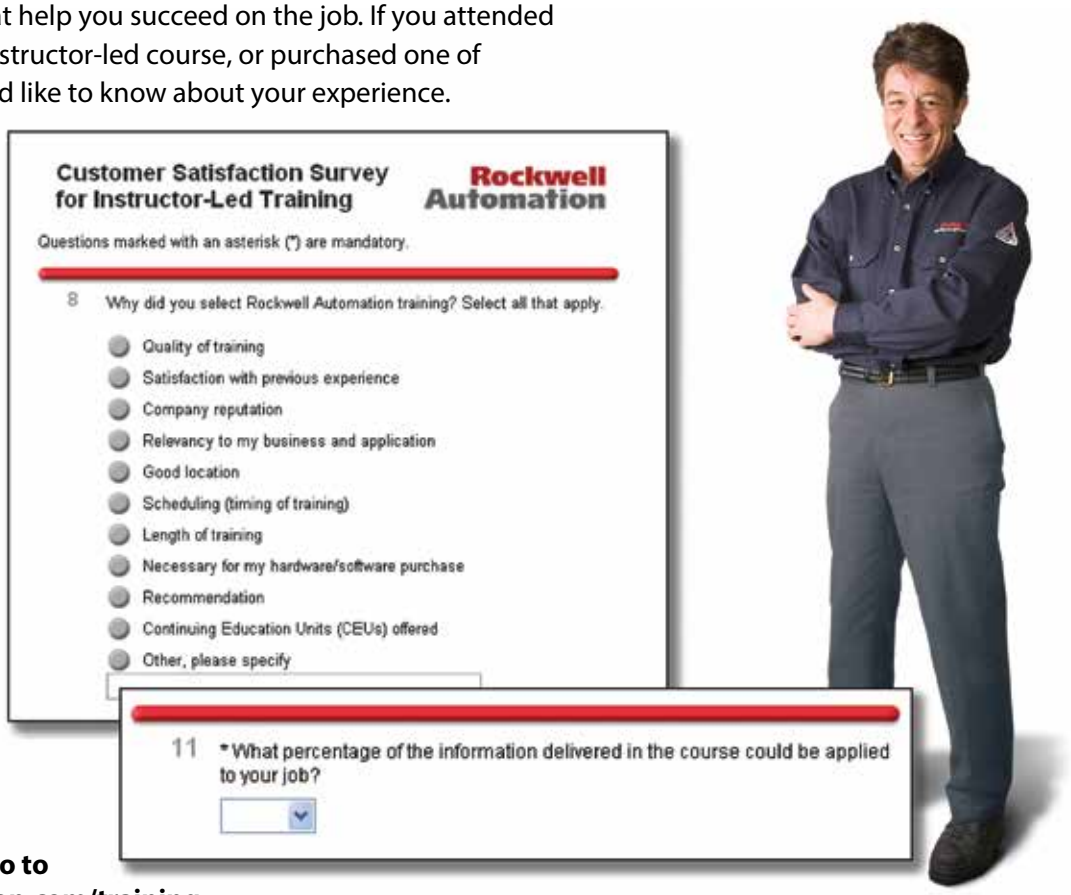
- View technical/application notes
- Obtain software patches
- Subscribe for product/service email notifications
- Submit a Question, Live Chat, Support Forums and more

Visit Get Support Now, www.rockwellautomation.com/support to select your country and find your local support information.

Follow ROKAutomation on Facebook & Twitter. Connect with us on LinkedIn.

Tell Us What You Think.

Rockwell Automation strives to provide training courses and instructional products that help you succeed on the job. If you attended a Rockwell Automation instructor-led course, or purchased one of our training products, we'd like to know about your experience. We welcome feedback from supervisors or managers who supported their employees' training experience or purchased our training products.



To provide your input, go to www.rockwellautomation.com/training and click on the survey link in the top right area.

Rockwell Automation, Inc. (NYSE:ROK), the world's largest company dedicated to industrial automation, makes its customers more productive and the world more sustainable. Throughout the world, our flagship Allen-Bradley® and Rockwell Software® product brands are recognized for innovation and excellence.

Follow ROKAutomation on Facebook & Twitter. Connect with us on LinkedIn.

www.rockwellautomation.com

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