

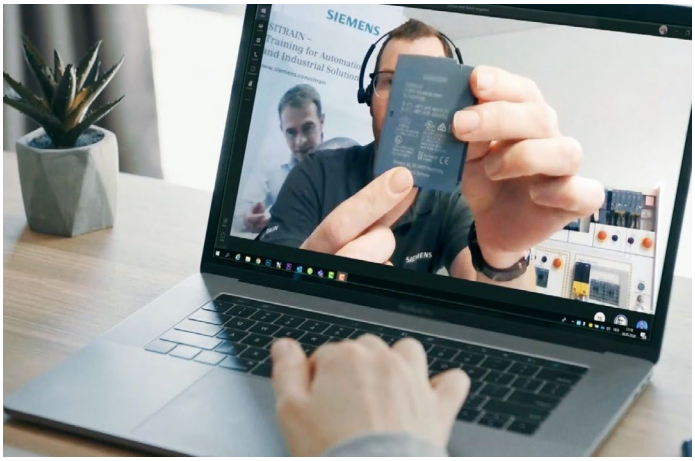
2026 COURSE CATALOG

SITRAIN® Digital Industries Learning

usa.siemens.com/sitrain

SIEMENS

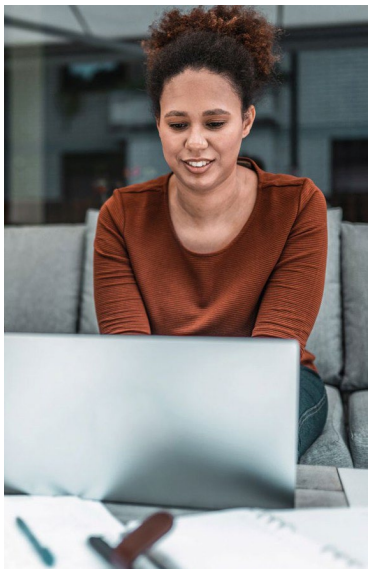
What our customers are saying...



"

The instructor did an extraordinary job in delivering the subject matter and content. He makes very efficient use of the time and emphasizes more critical or more important topics appropriately.

Class participant



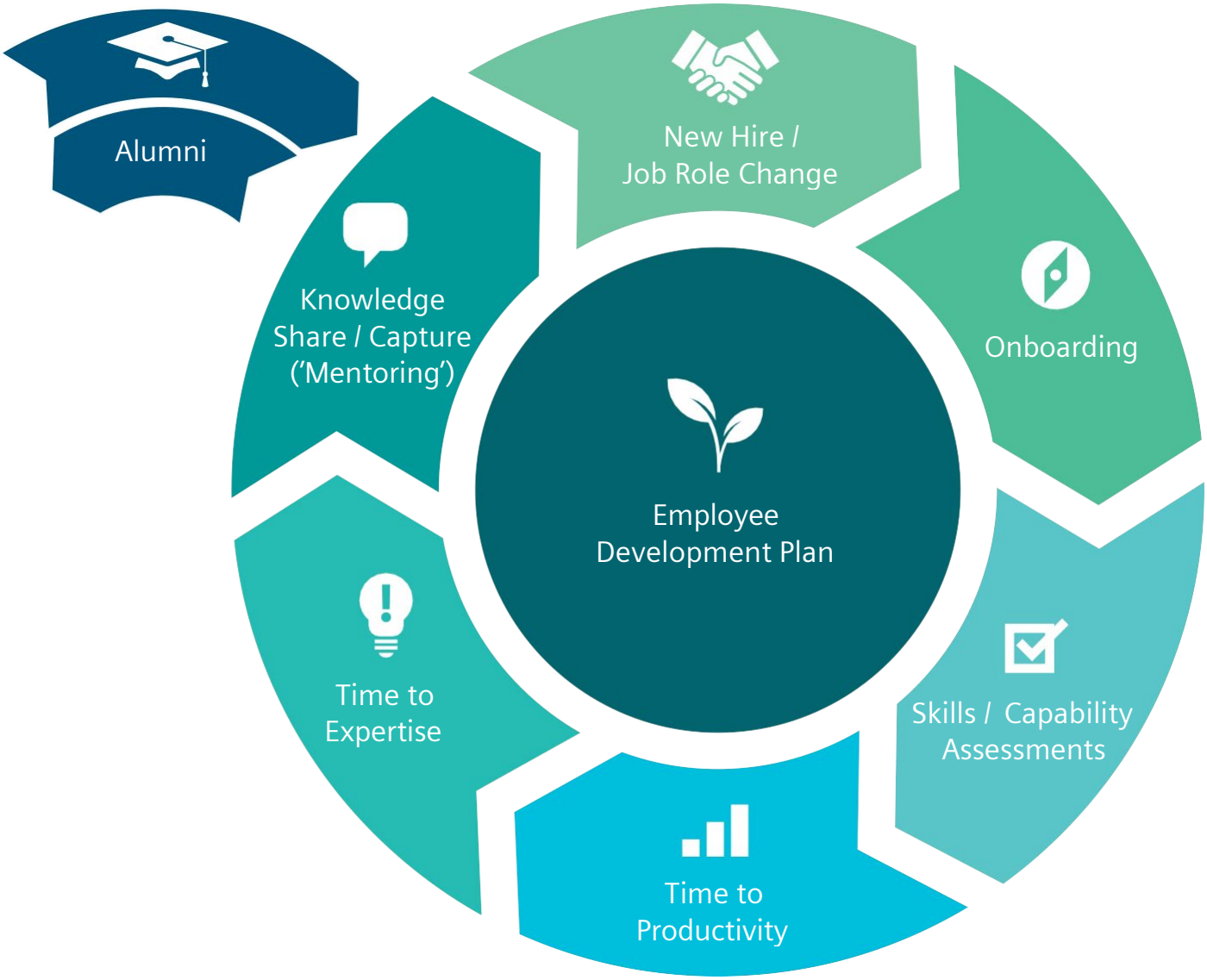


"

The instructor explained the concepts very well and showed many examples that helped my understanding. I can apply this learning to my plant PCS7 system.

Class participant

How we approach your workforce learning challenges




SIEMENS
Online S
Home
Find Courses

Index

Workforce performance improvement consulting	**6**
Credentials matter	**7**
Building applicable, practical know-how	**8**
SMSCP: Siemens Mechatronic Systems Certification Program	**9**
The learning path	**10**
Learning Memberships available to you	**11**
Learning Events, a compact and guided way to acquire knowledge	**12**
Simulator systems	**13**
Creating Experts in your organization	**14**
Virtual Instructor-led Learning	**15**
Classroom learning	**16**
How-to Video Library	**17**
Learning Maps and Course Offerings	**19**

Workforce performance improvement consulting

Siemens experts can develop a comprehensive learning plan that improves productivity for your entire workforce.

A recent report from Deloitte and the Manufacturing Institute (MI) projects more than three million U.S. manufacturing jobs will open up over the next decade. Two million of those vacancies are expected to go unfilled.

Experts have warned for years about the manufacturing workforce reality created by retiring baby boomers taking decades of knowledge with them as they leave. While candidates are lining up for these jobs, many do not yet have the digital skills required for the changing workplace creating a manufacturing skills gap challenge.

The solution to bridging this skills gap is to improve performance by identifying and increasing the related competencies for the specific job or role, thereby increasing job performance as well as overall organizational performance.

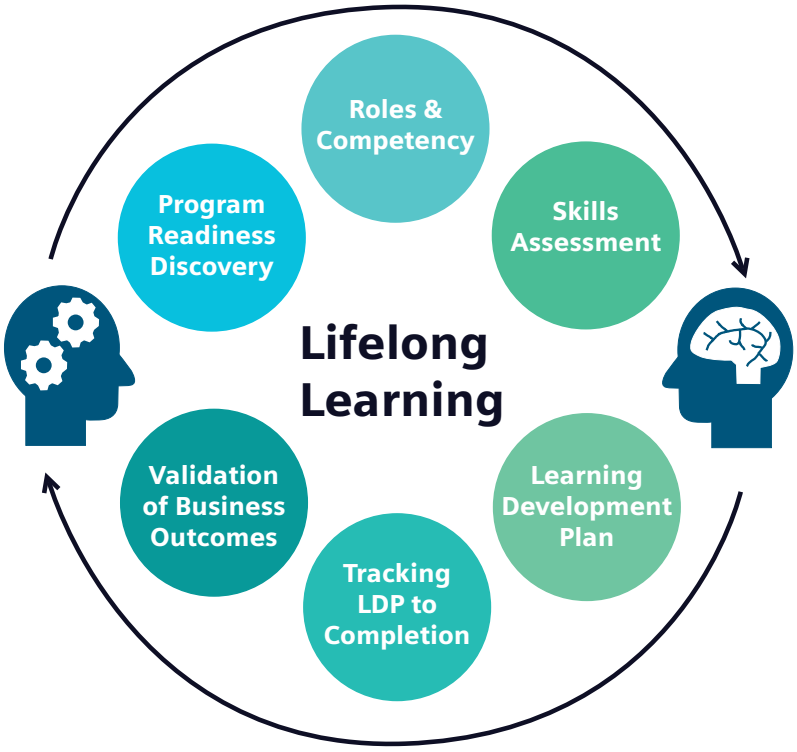
Workforce Performance Improvement consulting

Siemens Workforce Performance Improvement consulting is a well-defined, six-stage cyclic program providing transparency into employee job skills for success. Our program begins by aligning current worker competency to business targets.

Each of the six stages have been carefully designed with the end in mind. The improvement process begins by identifying your key performance indicators (KPI) related to workforce learning.

As part of the process, employees are evaluated and set on purposeful and self-sustaining performance-based skill development paths – paths which result in a highly skilled, confident and motivated workforce. This, in turn, results in less downtime, reduced turnover and, ultimately, an improved bottom line for your operation.

Siemens approaches the learning process from your business perspective. We have a common goal: improving job performance based on your business needs.



Credentials matter

Continuing Education Units

SITRAIN Digital Industries Learning is an Accredited Provider of IACET Continuing Education Units (CEU). Our accreditation with IACET is a demonstration of SITRAIN US' commitment to quality adult education and high standards for all of our learners. We are very pleased to maintain our relationship with such a prestigious organization as well as an elite group of organizations that offer excellent continuing education and learning programs.



Digital badges

Through SITRAIN – Digital Industries Learning Micro-credentialing Program, you can easily display knowledge and competencies to employers, colleagues, and professional organizations on your email signature, social media sites and other electronic media.

Key benefits for learnings include:

- Employers can easily track student competency badges.
- Track employee competencies across the workforce for new technologies
- Employees can digitally display competencies

Once you have successfully completed your course, you will receive your Micro-credential badge.









Key benefits for learners include:

- Transferable CEUs between cooperating organizations
- Vendor of choice is made easier by recognizing IACET brand
- Assurance of quality programming
- Assurance of standards-based record keeping

Did you know you can convert your CEUs to Learning Units (LU) or to Professional Development Hours (PDH)?

- 1.0 CEU = 10 PDHs for engineers
- 1.0 PDH = 1.0 Clock Hour (minimum 50 minutes)

Building **applicable, practical know-how**



Siemens Cooperates with Education – support for schools interested in engaging with leading edge industrial technologies.

Through the Siemens Cooperates with Education (SCE) initiative, universities, K-12 schools and community colleges are afforded the opportunity to partner with Siemens on leading edge industrial technologies in their classrooms, research projects and workforce development programs. We provide support through equipment, software, instructor training and technical guidance.

The SCE program offers curriculums and automation training based on Massive Open Online Courses (MOOC) and blended learning concepts for conveying know-how on the digital enterprise. Educational institutions benefit from special conditions, support and partnerships.

For more information, see Siemens Cooperates with Education usa.siemens.com/sce.

Curriculum	Workshops & Classes	Trainer Packages	Learning Systems	Promoters
Course material and instructional tools.	Know-how transfer. Products, innovations and solutions.	Leading technologies, with deep discounts for schools.	Professional systems offered by our Didactic Partners.	Face-to-face support worldwide–in many regions.



By teaching Siemens, our students are much more attractive in the job market. Companies come from far away to recruit at our school (a small rural community college). We now have a German company recruiting students to take to Germany and train there for 2 years and then come back to work in the US for them.

Tri-County Technical College

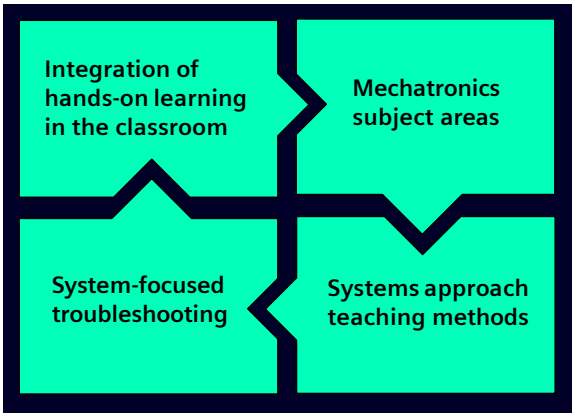
SMSCP: Siemens Mechatronic Systems Certification Program

Success factor of SMSCP: Holistic approach to mechatronic systems

Our systems approach is the core of the Siemens Mechatronic Systems Certification Program (SMSCP), which has been used with a high degree of effectiveness in training Siemens' own engineers in Germany. All SMSCP courses are supposed to be integrated within a high school, college, or university curriculum, or to be implemented as continuing education.

Mechatronics is not only the marriage of electrical, mechanical, and computer technologies; it is also a philosophy for looking at systems. Under the systems approach, students learn about the complexities of the system in a holistic fashion. Afterwards they do not only have a Siemens mechatronics certification, more important they are capable of easily transfering their knowledge to other systems, resulting in flexible and autonomous employees. The systems approach is the core of the Siemens Mechatronic Systems Certification Program (SMSCP).





Benefits for partner schools

Partner schools can rely on Siemens' 130 years of experience combined with new teaching methods based on the German dual system. You can benefit from worldwide standards for the training and the certification set by Siemens, our holistic approach of teaching mechatronics to meet skills requirements from industry, and future-proof content such as the digital enterprise.

Benefits for students

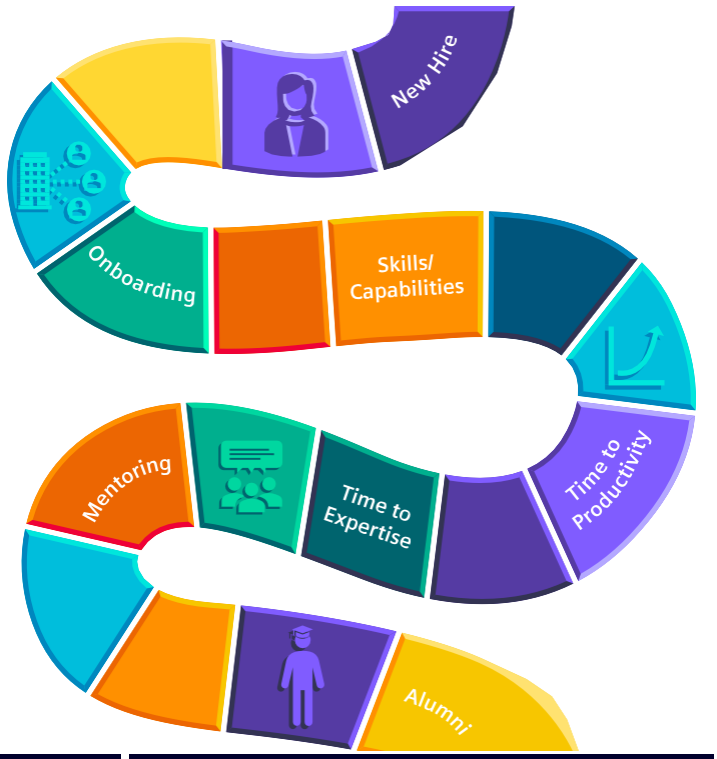
SMSCP increases the employability of students and speeds up their transition into the job based on extensive troubleshooting training on real systems. SMSCP is a recognized, international industrial certification, and lets students obtain an industry certification, in addition to a certificate or a degree. It's integrated in the current studies and comes at low costs.

Benefits for employers

With SMSCP, students are ready for the job, reducing on-the-job training and preparing them for the tasks that industry seeks today and in the future. Our vendor-neutral broad-based training with worldwide standards, the certification set by Siemens increase efficiency and productivity among machine operators, technicians, and engineers.

The **learning** path

Providing innovative and adaptive learning services resulting in extraordinary business performance



	The challenge	Our solution
New Hire	• Capability to Learn • Day 1 Readiness (Tools / Systems / Equipment) • Onboarding	• Entry-level skills identification workshops • Assessment center development / consulting • Strategic Workforce Planning consulting
Onboarding	• Onboarding • General / Specific Role Info	• Entry level technical skill intros (virtual / WBT) • Siemens' technology intros
Skills / Capabilities	• Existing Skill Levels / Role Requirements • Assessment Tools • Learning Paths (by position/role)	• Workforce Performance Improvement consulting • Technology learning paths by role • Refresher training or new requirements
Time to Productivity	• Skills Mapping / Transferrable Skills • Learning Paths (by position/role) • Learning Path with Soft Skill Mapping	• Workforce Performance Improvement consulting • Technology learning paths
Time to Expertise	• Capability to Learn • Day 1 Readiness (Tools / Systems / Equipment) • Onboarding	• Entry-level skills identification workshops • Assessment center development / consulting • Strategic Workforce Planning consulting
Mentoring	• Capability to Learn • Day 1 Readiness (Tools / Systems / Equipment) • Onboarding	• Entry-level skills identification workshops • Assessment center development / consulting • Strategic Workforce Planning consulting
Alumni	• Capability to Learn • Day 1 Readiness (Tools / Systems / Equipment) • Onboarding	• Entry-level skills identification workshops • Assessment center development / consulting • Strategic Workforce Planning consulting

Learning Memberships available to you

With Learning Membership, you get access to the extensive and constantly growing range of self-learning units on SITRAIN access, the digital learning platform. Search and find specific learning content or just browse – anywhere and anytime. Memberships promote a modern learning culture through self-reliant, continuous learning and transparency about the learning success within your team and company.

How-to Video Library

Access refresher videos on-demand, in short, easy-to-understand bites. Our How-to Video Library offers an impressive and growing collection of short videos reminding you how to perform the critical tasks you learned in class. Can be deployed as post training refreshers, a support tool for OJT and technical coaching, and production line fault troubleshooting and resolution.

Online Self-paced Learning

Access a broad selection of self-guided, interactive, industrial courses designed to meet your needs. Available 24/7, these courses are perfect for building a staff training plan and on-boarding new employees. Our catalog contains over 400 unique titles which can be completed in one to two hours. Our courses include high-quality graphics, well-written on-screen text, supporting voiceover narration, and interactive exercises and end with an exam. Test scores and completion certificates are available to you on "My Dashboard", which is accessible from the menu once you have logged in.

SITRAIN Access

SITRAIN access is the digital learning platform for industry. It facilitates digital, innovative learning and professional education in all sectors. It's online, flexible, continuous, and personalized. Our knowledge offerings are curated by our experts, arranged in modular form, and can be accessed to suit your own requirements. SITRAIN access is more than just a video platform: Constant additions to its content, together with the ability to monitor your progress and complete practical exercises, fulfill all the requirements for sustainable learning.



How-to video Library

Click to learn more

Online Self-paced Learning

Click to learn more

SITRAIN Access

Click to learn more

Learning Events, a compact and guided way to acquire knowledge

With Learning Events, you will reach a set learning goal in the shortest possible time. The learning consultant guides you through the practical exercises and is also available to you for the entire duration of the theoretical units. Focus on your learning in a protected learning environment away from everyday work: virtually, in the training center, or in your company.

Face-to-face Instructor-led Learning
Learn together with others, guided by a learning consultant. Face-to-face learning can take place in the SITRAIN Learning Center or at your company.

Virtual Instructor-led Learning
Our Virtual Instructor-led Learning courses give students a live, classroom experience with the convenience and cost savings of remote learning. The courses help build critical skills and knowledge. They provide hands-on instruction and live interaction as effectively as our classroom courses, while being delivered in the comfort of your office or home.



Simulator systems

World-class performance assist tools available for purchase

Engineered to provide a real-world experience, Siemens simulators are fully functional, ready-to-use systems available in formats ranging from simple PLCSIM to fully integrated motion control systems. System-level design makes the simulators an invaluable tool for program testing and debugging, reinforcing learning, shop floor troubleshooting, and more. With portable construction and hard-shell cases, they can be easily transported. Custom-built systems are also available.

For additional details and pricing, please call 770-625-5644 or email: ***sitrain.registrar.industry@siemens.com***.

Or ***download the catalog***.



Virtual Machine Rental and Mentoring

The online virtual machine is a web browser-based format requiring no additional software installation on the attendee's computer. Your rental includes exclusive 24-hour access to a cloud-based virtual machine identical to that used in face-to-face and virtual classroom training with all necessary software pre-loaded.

Virtual Machine rental is intended for anyone who has attended Siemens Digital Industries Learning courses. They provide an opportunity to enhance your training experience with continued practice and exploration.

Creating Experts in your organization

Siemens certification programs

Certified expertise – worldwide
Shorter innovation cycles combined with market pressures on productivity, cost and quality make highly skilled staff a necessity. Siemens offers training backed by certifications which enable the efficient use of Siemens technologies and provide an assurance of staff skills and capabilities. Having the relevant expertise is an essential prerequisite for competent, effective action, which leads to shorter commissioning times, lower maintenance expenditures, minimized downtime and much more.

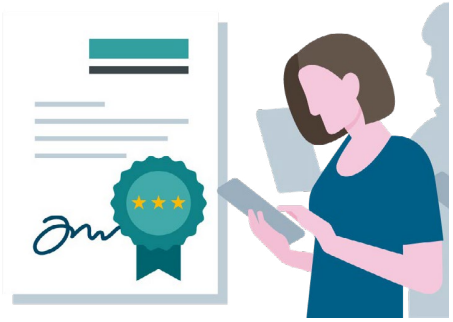
Getting started
Getting started with the Siemens Certification program is easy. Simply attend the specified courses for the desired certification path. Once complete we recommend you build applied experience on your application and have ready access to STEP 7 software for reviewing and reinforcing the subjects covered in the training courses. Continued review and practice of course materials and lab exercises are critical to passing the certification exam. The exam is a combination of written test plus hands-on with the S7 simulator systems.

Certification program benefits
- Flexible and confident workforce
- Proven competence
- Globally recognized credentials
- Comprehensive skill set definition

Certification skills summary
- Structure and create programs using complex data types, multi-instance block functionality, and indirect addressing
- Program quickly, efficiently, and safely
- Efficiently program CPU resources, communications, data passing, and integrated diagnostics
- Design program structures for automation projects

Certification Programs:

Click here for a list of our current Certification Programs.



Virtual Instructor-led Learning

Classroom lectures delivered in the convenience of your home or office

Our Virtual Instructor-led Learning courses give students a live, classroom experience with the convenience and cost savings of remote learning. The courses help build critical skills and knowledge. They provide hands-on instruction and live interaction as effectively as our classroom courses, while being delivered in the comfort of your office or home.

The length of each course varies depending on the content. Most courses are 4 to 5 days per week, and range from 2 to 5 hours per day. These sessions provide students with lecture, demonstration, lab exercises and Q & A presented by a Siemens certified instructor. Students will have 24-hour access to fully functional Siemens software to complete assignments via a virtual cloud-based application.

Virtual Instructor-led courses include:

- Live scheduled lectures and demonstrations
- Live group and individual Q & A session
- Fully functional automation projects using Siemens simulation tools
- Lab exercises and solution reviews
- Student and instructor desktop sharing
- Access to recorded lectures



All digital product offerings

To view the schedule, please visit:
https://www.sitrain.us/LMS/Online.aspx

- Online Self-paced technology and safety library
- Virtual Instructor-led courses build foundation knowledge with flexibility
- How-to Video Library offers task-based 1-5 minute videos

Visit *https://www.sitrain.us/LMS/VirtualInstructorLed.aspx* to view all Virtual Instructor-led learning.

Classroom Learning

Expert and professional instructors, proven course-ware and quality workstations combine for the most effective classroom experience possible

Studies indicate that when students practice what they have learned in a classroom setting they will retain 75% of the lesson, as compared with lecture-only settings where they retain just 20% of the lesson. Designed to mimic real-world environments, Siemens simulator workstations provide a safe and risk-free platform for job training, project testing, design engineering, and troubleshooting.

Our learning content is reviewed and approved by Siemens technical and operational experts to ensure compliance with the highest industry, health, safety, and environmental standards. For more information visit usa.siemens.com/sitrain.

We combine technology and industry experience to deliver highly effective, customized learning programs.

- Job targeted courses
- Hands-on learning and skill building
- System-level training approach
- Extensive schedule of classes
- Various media and course length options
- On-site and custom courses
- Multiple training center locations
- Packaged services and products



Benefits to employees

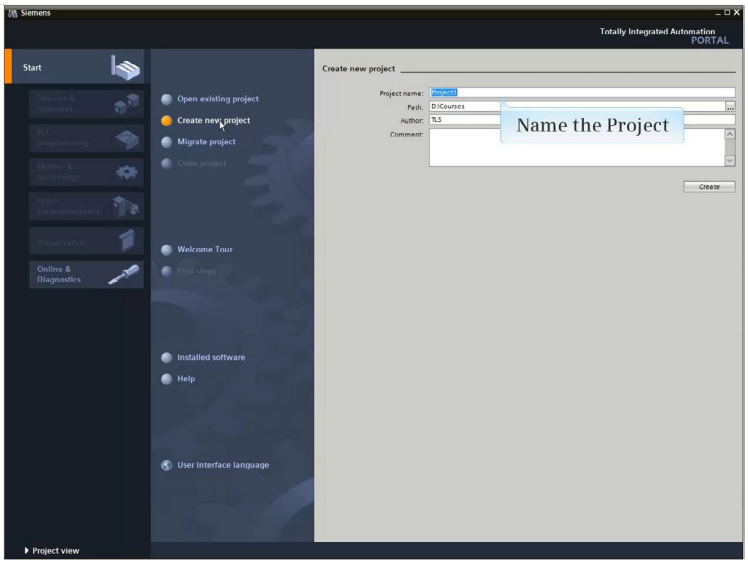
SITRAIN learning programs provide your employees with the opportunity to achieve personal goals, while at the same time, positively impacting your operating and financial goals. Benefits include:

- Increased productivity and efficiency
- Reduced employee turnover
- Decreased downtime and faster error resolution
- Improved safety and risk management
- Flexibility to adopt new technologies/ methods
- Enhanced company image and talent recruiting

How-to **Video Library**

Quick, affordable, performance assist tools that cover a broad range of automation topics

This extensive library of short videos was created by our instructional experts to meet the real-world needs of industry, with all levels of experience in mind. By providing on-demand, how-to instruction in easy-to-understand snippets, the How-to Video Library helps maintain the critical industrial and manufacturing knowlege as well as the skills developed during instructor-led training courses. Videos are typically three-minutes long and conveniently available via any computer or mobile device with Internet access.



Learning begins once you've completed registration

- Start your subscription at any time – videos are available 24/7/365
- Purchase one, three, six or twelve month subscriptions by technology or in one complete bundle
- Take advantage of our most-flexible option – ultimate access with a full, one-year subscription

Want to learn more?

Browse our complete library of How-to Video Library at: https://www.sitrain.us/LMS/HtVL.aspx

How-to Videos

- Automation – SIMATIC S7 with STEP 7 v5.x
- Automation – SIMATIC S7 with TIA Portal
- CNC – SINUMERIK Power Line & Solution Line
- SINAMICS Drives
- Process Control – SIMATIC PCS7
- Even more technology categories are being added this year!



Learning maps and course offerings

Discrete Automation

S7-300 / S7-400 / STEP 7 V5.X: Engineering Core **20**
S7-300 / S7-400 / STEP 7 V5.X: Maintenance **25**
TIA Portal / S7-1200 / S7-1500: Engineering Core **29**
TIA Portal / S7-1200 / S7-1500: Maintenance **36**
SIMATIC HMI with TIA Portal **41**
SIMATIC HMI **43**
NETWORKING **45**

Digital Enterprise

Digital Enterprise **47**

Machine Tool

Power Line / HMI Advanced **50**
Solution Line / HMI Advanced / HMI Operate **52**
SINUMERIK ONE **55**

Drives & Motion

SINAMICS **57**
SINAMICS /SIMOTION / SIMATIC Motion **60**

SIMOCODE

SIMOCODE **62**

Process Automation

PCS7 Technician / Maintenance & Operator **64**
PCS7 Engineering **67**

Electrical Maintenance & Safety

Electrical Maintenance & Safety **71**

Industrial Networking and Identification

Industrial Networking and Identification **75**

SIEMENS

Discrete Automation: *S7-300 / S7-400 / STEP 7 V5.X*

Engineering Core Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)

Siemens Mechatronic Systems Certification Program (SMSCP)

quickSTEP Courses

Online Self-Paced Learning

SITRAIN Access

Introduction to SIMATIC PLCs & Languages with Diagnostics

Formal Learning (Deep Dive)

S7 Programming 1

S7 Programming 2

Performance Assist Tools

How-to Video Library

Simulation Systems

Virtual Mentoring

Advanced Learning

S7 Programming 3

S7 Advanced Troubleshooting

S7 Programming with Statement List (STL)

Siemens Certified Programmer with STEP 7 V5.x

S7-300F Distributed Safety Engineering

S7 Graph / PDiag / ProAgent Workshop

SIMATIC S7, Programming with SCL

Discrete Automation

S7-300 / S7-400 / STEP 7 V5.X: Engineering Core

Introduction to SIMATIC PLCs & Languages with Diagnostics

Course code: US-S7BADIA

Target groups: Maintenance ; Engineer ; Programmer

Description: This course is for engineers and maintenance personnel who are new to PLC programming - who will be creating, modifying, or diagnosing hardware issues in S7 PLC systems with SIMATIC STEP 7 software. This course is designed to provide the student with core SIMATIC PLC program fundamentals. For learners new to PLC applications, this course is an ideal preparation to the S7 Programming 1 or S7 Automation Maintenance 1 courses. Whether designing a PLC program or Diagnosing hardware issues in a control system, this course builds fundamental skills and confidence in key concepts, navigation, tools, and procedures for a successful continuous learning path. Students needing a solid introduction to the core PLC programming languages will find this a great fit. Three program editors, LAD, FBD and STL are introduced with the primary development and troubleshooting tools. Basic logic development and data memory management complete the curriculum and help the student build skills in PLC program basics. This is a face to face, instructor lead course consisting of in class instruction and exercises.

S7 Programming 1

Course code: US-S7TIAP1C

Target groups: Programmer ; Engineer

Description: This course is for SIMATIC S7-300/400 PLC users who are involved with developing or sustaining automation systems and their application programs. This hands-on, highly engaging course is the first in a three part series which builds basic programming skills using Siemens STEP7 software. Students will learn S7 project management, program design and application development. This is an aggressively paced curriculum covering S7 programming with Ladder logic. The basics of programming with Function Block Diagram (FBD), and Statement List (STL) languages are also covered. Key software tools and best practices techniques are taught. Participants employ the Totally Integrate Automation concept by integrating an S7300 PLC, HMI, ET200S remote I/O station and a desktop conveyor system connected by PROFIBUS.

Throughout this course participants build and manage a STEP7 project from beginning to end, learning proper program structure and documenting. Software diagnostic

S7 Programming 2

Course code: US-S7TIAP2B

Target groups: Programmer ; Engineer

Description: This course is for SIMATIC S7-300/400 PLC users with basic engineering experience in the design and sustaining of SIMATIC automation systems and their application programs. This course is the second in a three part series which increases skills with Siemens STEP7 Totally Integrated Automation. Students will learn to leverage the power of Simatic software with advanced structured programming techniques. A systems approach to the integration of efficiently programming the S7300/400 PLCs, plus connectivity and functionality of an HMI and Micro Master Drive are the central focus of this course. Emphasis on Statement List (STL) programming for both direct and indirect addressing is an integral part of the course. The core issues of efficient use of CPU resources, establishing communications, passing information, and managing integrated diagnostics are included. Skills in error management and extended diagnostics are reinforced throughout this agenda. This course includes classroom instruction, demonstration and considerable hands-on lab work.

S7 Programming 3

Course code: US-S7TIAP3B

Target groups: Maintenance ; Programmer

Description: This course is for advanced SIMATIC S7300/400 users who are involved with developing or maintaining automation systems and their control applications. This course builds advanced skills in control system programming in a control systems environment. Workstations will include the S7 PLC, Touch Panel HMI, Drive system and both PROFIBUS and Ethernet networks. Students will be challenged with a number of advanced programming techniques including data management routines, advanced system functions, new program efficiency tools and error handling. Advanced level blocks, functions, tools and libraries are discussed and demonstrated. In addition, students will learn systems integration techniques which build efficiency in control systems management. Students will perform basic configurations and integration of the HMI and Drive systems maximizing system efficiency and diagnostics. The course concludes with a brief review of Siemens optional program editors and engineering tools.

tools are used for troubleshooting both hardware and code. Various instruction sets, memory areas, program blocks, and libraries are introduced to provide the student with solid concepts of structured programming. This course employs the current adult learning techniques featuring brief lectures followed by multiple engaging hands-on, task based skills that begin early Monday morning and continue all week long. Instructors verify student skills and sign off on a task completion list throughout the week. At the end of the week, participants complete an independent project to showcase and reinforce the skills they have learned during the week.

Discrete Automation

S7-300 / S7-400 / STEP 7 V5.X: Engineering Core

S7 Advanced Troubleshooting

Course code: US-S7TIATBL

Target groups: Maintenance ; Engineer

Description: This course is for experienced SIMATIC S7-300/400 PLC Maintenance Technicians, Service Technicians, and Service Engineers. Learners will expand their knowledge in diagnostic troubleshooting using Siemens STEP7 Totally Integrated Automation Software. This is an advanced course focused on diagnostic troubleshooting using Siemens STEP7 Totally Integrated Automation Software. Learners will expand their knowledge on how to troubleshoot, diagnose, and repair programming and hardware configuration issues within Siemens S7300/400 PLC's. This course includes classroom instruction, demonstration, and considerable hands-on lab work.

S7 Programming with Statement List (STL)

Course code: US-S7STLP2B

Target groups: Engineer ; Programmer ; Maintenance

Description: This course is intended for SIMATIC S7-300/400 PLC users with basic programming experience in designing and sustaining SIMATIC automation systems and associated Statement List application programs. The Statement List programming course is designed to provide participants with STL programming skills using a blended learning approach utilizing classroom lecture, instructor demonstration and hands-on tasks. These tasks increase Siemens STEP7 Totally Integrated Automation (TIA) skills through the creation of a Siemens TIA project.

Siemens Certified Programmer with STEP 7 V5.x

Course code: US-S7TIAR2A

Target groups: Programmer

Description: This course is intended for experienced STEP 7 programmers seeking a Siemens Certification which is recognized globally. This refresher course will help prepare the participant for the Siemens Certified Programmer Certification Test. This hands-on, instructor led course provides a focused review and skills refresher of topics taught in TIA Programming 1, 2, and 3 courses. This refresher is intended to prepare the student for the Siemens Certified Programmer Test, course code SCT-S7TIAC3A. The certification test is conducted on day five of the training.

S7-300F Distributed Safety Engineering

Course code: US-S7SFTE1A

Target groups: Programmer ; Engineer

Description: This course is for engineers and personnel responsible for implementing SIMATIC Distributed Safety systems, including: • Selecting the appropriate architecture • Selecting the components and understanding their specific purposes and limitations • Specifying the module and system wiring • Developing the safety PLC program • Starting up and supporting the system. This course introduces the student to a Siemens Distributed Safety PLC application. Participants receive knowledge on applying the system per relevant standards, Failsafe Hardware Module details and parameterization, Safety Program structure and implementation, Safety Communications, System Diagnostics and introduction to Drive Safety.

Discrete Automation

S7-300 / S7-400 / STEP 7 V5.X: Engineering Core

S7 Graph / PDiag / ProAgent Workshop

Course code: ST-7GRAPH

Target groups: Programmer ; Engineer

Description: This course is for SIMATIC S7-300/400 PLC users involved in developing or sustaining automation systems that use of S7Graph. This course concentrates on the S7 GRAPH programming language with a review of the S7 block architecture focusing on the Function Block and the Instance Data Block. The STEP 7 software tools and S7 GRAPH programming element's structure are introduced within the course to guide the student through the development of a realistic application. The use of test, debug and diagnostic tools complete the programming exercises. The course is a combination of instruction and hands-on exercises.

SIMATIC S7, Programming with SCL

Course code: ST-7SCL

Target groups: Engineer ; Programmer ; Maintenance

Description: This course is for engineering and maintenance personnel, who create, diagnose and troubleshoot SIMATIC STEP7 applications with Structured Control Language (SCL) content. This course provides an in depth look at STEP7 programming and program troubleshooting with a focus on the Structured Control Language (SCL) - a PASCAL- similar high level text language for programming mathematical algorithms, data management and organization tasks for Siemens automation systems.

SIEMENS

Discrete Automation: *S7-300 / S7-400 / STEP 7 V5.X*

Maintenance Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)

Siemens Mechatronic Systems Certification Program (SMSCP)

quickSTEP Courses

Online Self-Paced Learning

SITRAIN Access

Introduction to SIMATIC PLCs & Languages with Diagnostics

Formal Learning (Deep Dive)

S7 Automation Maintenance 1

S7 Automation Maintenance 2

Performance Assist Tools

How-to Video Library

Simulation Systems

Virtual Mentoring

Advanced Learning

S7 Advanced Troubleshooting

Siemens S7 Certified Service Technician Level 1

S7-300F Distributed Safety Sustaining

Discrete Automation

S7-300 / S7-400 / STEP 7 V5.X: Maintenance

Introduction to SIMATIC PLCs & Languages with Diagnostics

Course code: US-S7BADIA

Target groups: Maintenance ; Engineer ; Programmer

Description: This course is for engineers and maintenance personnel who are new to PLC programming - who will be creating, modifying, or diagnosing hardware issues in S7 PLC systems with SIMATIC STEP 7 software. This course is designed to provide the student with core SIMATIC PLC program fundamentals. For learners new to PLC applications, this course is an ideal preparation to the S7 Programming 1 or S7 Automation Maintenance 1 courses. Whether designing a PLC program or Diagnosing hardware issues in a control system, this course builds fundamental skills and confidence in key concepts, navigation, tools, and procedures for a successful continuous learning path. Students needing a solid introduction to the core PLC programming languages will find this a great fit. Three program editors, LAD, FBD and STL are introduced with the primary development and troubleshooting tools. Basic logic development and data memory management complete the curriculum and help the student build skills in PLC program basics. This is a face to face, instructor lead course consisting of in class instruction and exercises.

S7 Automation Maintenance 1

Course code: US-S7300S1C

Target groups: Maintenance ; Reliability

Description: This course is the first of a two-part series designed for maintainers and “first responders” to Siemens S7 automated control systems. Maintenance technicians, electricians, supervisors and others, who need to develop active skills using their Siemens Hardware system, should attend this course to maximize line uptime. This course also provides a great platform for those new to automation systems and state-of-the-art industrial electronics. Automation Maintenance 1 is a new course designed using Performance-Based Learning strategy which adopts current Adult Learning and Development standards and practices. The result is a course with well-defined performance-based learning objectives that emphasizes task-based assessments of student performance. To successfully complete each module in the course, a student must demonstrate his/her ability to perform a specific automation task demonstrating the application of automation knowledge and skills.
Brief instructor led discussions followed by numerous

S7 Automation Maintenance 2

Course code: US-S7300S2C

Target groups: Maintenance ; Reliability

Description: This course is the second of a two-part series designed for maintainers of and “first responders” to Siemens S7 automated control systems. Maintenance technicians, electricians, and supervisors who need to develop active skills using their Siemens hardware system, should attend this course to maximize process uptime. This course also provides a great platform for those new to automation systems and state-of-the-art industrial electronics. Automation Maintenance 2 is a new course designed for using Performance-Based Learning strategy which adopts current Adult Learning and Development standards and practices. The result is a course with well-defined performance-based learning objectives that emphasizes task-based assessments of student performance. To successfully complete each module in the course, a student must demonstrate his/her ability to perform a specific automation task demonstrating the application of automation knowledge and skills. Automation Maintenance 2 is a course designed with brief instructor led discussions followed by numerous hands-on exercises using a Totally Integrated Automation (TIA) plant model to develop and reinforce practical experience. The TIA plant model consists of an S7-300 automation system, ET200S and ET200pro distributed I/O stations, SIMATIC HMI Touch Panel, and a working conveyor model, all communicating over PROFINET. Students perform hardware and software diagnostics and troubleshooting as well as restoring a faulted PLC system to a normal operating state. This course builds on the knowledge obtained in Automation Maintenance 1 (SCT-S7300S1C) and offers 60% hands-on lab time and 40% lecture/discussion/Q and A.

S7 Advanced Troubleshooting

Course code: US-S7TIATBL

Target groups: Maintenance ; Engineer

Description: This course is for experienced SIMATIC S7-300/400 PLC Maintenance Technicians, Service Technicians, and Service Engineers. Learners will expand their knowledge in diagnostic troubleshooting using Siemens STEP7 Totally Integrated Automation Software. This is an advanced course focused on diagnostic troubleshooting using Siemens STEP7 Totally Integrated Automation Software. Learners will expand their knowledge on how to troubleshoot, diagnose, and repair

hands-on exercises using a Totally Integrated Automation (TIA) plant model develop and reinforce practical experience. The TIA plant model consists of an S7-300 automation system, ET200S distributed I/O station, SIMATIC HMI Touch Panel, and a working conveyor model. Students perform visual and multi-meter wire checks, hardware component diagnostics and troubleshooting as well as equipment replacement and restoring a failed PLC system to a normal operating state. Upon completion of the course, maintenance technicians should be able to establish communications to a Siemens PLC system, diagnose, troubleshoot, and restore basic faults on an S7 hardware system, reducing costly downtimes. This course offers 60% hands-on lab time and 40% lecture/discussion/Q and A. Modular in design, this course is fully customizable for those interested in on-site training. Topics are designed for adjustments to meet plant specific needs. Call 1.800.241.4453 for more details.

programming and hardware configuration issues within Siemens S7300/400 PLC's. This course includes classroom instruction, demonstration, and considerable hands-on lab work.

Discrete Automation

S7-300 / S7-400 / STEP 7 V5.X: Maintenance

Siemens S7 Certified Service Technician Level 1

Course code: US-S7SVCR2A

Target groups: Engineer ; Programmer

Description: This course is for SIMATIC S7-300/400 PLC users with basic engineering experience in the design and sustaining of SIMATIC automation systems and their application programs. Automation engineering and technology advancement towards Totally Integrated Automation solutions no longer exclusively include programmable logic controllers (PLCs). Today it also includes industrial communication, operator control and monitoring, security technology and the connection of drives. We offer this test to qualify as a level one, Siemens certified SIMATIC technician.

S7-300F Distributed Safety Sustaining

Course code: US-S7SFTS1A

Target groups: Maintenance ; Engineer ; Programmer

Description: This course is for SIMATIC S7 300F PLC users who install or maintain automation safety systems and their application programs. This course introduces the student to a Siemens Distributed Safety PLC application. Participants will build skills on commissioning, troubleshooting and upgrading an automation safety system. Failsafe Hardware Module details and parameterization, Safety Program structure and implementation, and System Diagnostics are covered.

SIEMENS

Discrete Automation: *TIA Portal / S7-1200 / S7-1500*
Engineering Core Learning Map

Workforce Development

- Siemens Cooperates with Education (SCE)
- Siemens Mechatronic Systems Certification Program (SMSCP)
- quickSTEP Courses
- Online Self-Paced Learning
- SITRAIN Access
- Introduction to TIA Portal and Diagnostics

Formal Learning (Deep Dive)

- AB to S7 Programming with TIA Portal
- TIA Portal Programming 1
- SIMATIC Programming 1 in the TIA Portal
- TIA Portal Programming 2
- SIMATIC Programming 2 in the TIA Portal

Performance Assist Tools

- How-to Video Library
- Simulation Systems
- Virtual Mentoring

SIEMENS

Advanced Learning

TIA Portal Programming 3

Siemens Certified Programmer in TIA Portal

SIMATIC Motion Control 1 - TIA Portal

SIMATIC Motion Control 2 - TIA Portal

TIA Portal Advanced Troubleshooting

TIA Portal Programming with SCL

TIA Portal Safety Engineering

SIMATIC S7, Graphical Programming with CFC

SIMIT in Discrete Automation Technology for Beginners

SIMOVE Carrier Control

SIMOVE Advanced Navigation System Plus (ANS+)

BRAUMAT / SISTAR

OPC UA System Course

Discrete Automation

TIA Portal / S7-1200 / S7-1500: Engineering Core

Introduction to TIA Portal and Diagnostics

Course code: US-PTBADIA

Target groups: Engineer ; Maintenance

Description: This course is an introduction to the TIA Portal Development Environment and is an ideal preparation for the TIA Portal Programming 1 or TIA Portal Service 1 courses. This course helps students unlock the potential for increased productivity by building foundational concepts and diagnostic skills. Students will learn how to apply those skills to create or open existing projects, navigate work screens and informational cross-referencing, identify CPU and I/O hardware specifications, and conduct initial hardware diagnostics in TIA Portal. This is a face-to-face, instructor-led course consisting of in-class instruction and exercises.

Recommendation: Students familiar with programming in Allen Bradley software should attend the AB to TIA Portal course (SCT-PTABSP1A in person or virtual instructor-led SCT-PTOILABSP1A).

AB to S7 Programming with TIA Portal

Course code: US-PTABSP1A

Target groups: Programmer

Description: This course acknowledges the automation experience of the students and delivers must-know, advanced topics to experienced engineers interested in Siemens SIMATIC STEP 7 TIA Portal software. This course moves engineers/programmers quickly into the power of the STEP 7 TIA Portal engineering tool. Multiple STEP 7 program editors are presented, demonstrating the flexibility and fully integrated features of STEP 7. The course teaches Siemens STEP7 Software, recognizing the previous experience students have with Allen-Bradley platforms. The instructor has familiarity with AB platforms and software, from which they directly relate to the questions and experiences of students in the class.

This course concentrates on STEP 7 software, program structures, System Functions, advanced block libraries, and custom block design. STEP 7 engineering tools and programming instructions are demonstrated to guide the student through the development of a realistic application. The course format consists of instruction, demonstration, and hands-on exercises. Students utilize test, debug, and diagnostic tools to complete extensive programming exercises.

TIA Portal Programming 1

Course code: US-PTTIAP1A

Target groups: Programmer

Description: This course is the first in a three-part series which builds basic programming skills with Siemens TIA Portal software. Students will learn TIA Portal project management, program design, and application development. This is an aggressively paced curriculum covering the S7 programming editor with Ladder, Function Block Diagram, and Statement List programming languages, as well as key TIA Portal software tools. This course takes a systems approach using the S7- 1500 PLC, basic connectivity, and functionality of an KP700 HMI and ET200SP PROFINET I/O.

Throughout the course, students will build a TIA Portal project from the beginning, learning proper program structure and documenting. Software diagnostic tools will be used for debugging both hardware and code. Various instruction sets, memory areas, program blocks, and libraries will be introduced to provide the student with solid concepts of structured programming. The course format consists of instruction and hands-on exercises. The course uses a conveyor model for realistic demonstrations and exercises. It is recommended that students take Introduction to TIA Portal ((SCT-PTPLCI1A) to familiarize themselves with the software before taking this course.

SIMATIC Programming 1 in the TIA Portal

Course code: TIA-PRO1

Target groups: Programmer ; Engineer ; Maintenance

Description: This course is for SIMATIC S7-1500 and S7-1200 PLC users who are involved with developing or sustaining automation systems and their application programs. This course is the first in a three-part series which builds basic programming skills with Siemens TIA Portal software. Students will learn TIA Portal project management, program design, and application development. This is an aggressively paced curriculum covering the S7 programming editor with Ladder, Function Block Diagram, and Statement List programming languages, as well as key TIA Portal software tools. This course takes a systems approach using the S7- 1500 PLC, basic connectivity, and functionality of an KP700 HMI and ET200SP PROFINET I/O.

Discrete Automation

TIA Portal / S7-1200 / S7-1500: Engineering Core

TIA Portal Programming 2

Course code: US-PTTIAP2A

Target groups: Engineer

Description: This course is the second in a three-part series which increases skills with Siemens SIMATIC TIA Portal. Students will learn to leverage the power of TIA Portal software with advanced structured programming techniques. A systems approach to efficiently programming the S7-1500 and S7-1200 PLCs is covered. Integration and connectivity of PROFINET IO, HMI, and G120 Drive are the central focus of this course. Programming emphasis centers on Ladder (LAD) and Statement List (STL) logic, with an introduction to Structured Control Language (SCL) and S7-GRAPH. Both direct and indirect addressing are an integral part of the course.
The core issues of efficient use of CPU resources, establishing communications, passing information, and managing integrated diagnostics are included. Skills in error management and extended diagnostics are reinforced throughout this agenda. This course includes classroom instruction, demonstration, and considerable hands-on lab work.

SIMATIC Programming 2 in the TIA Portal

Course code: TIA-PRO2

Target groups: Engineer

Description: This course is the second in a three-part series which increases skills with Siemens SIMATIC TIA Portal. Students will learn to leverage the power of TIA Portal software with advanced structured programming techniques. A systems approach to efficiently programming the S7-1500 and S7-1200 PLCs is covered. Integration and connectivity of PROFINET IO, HMI, and G120 Drive are the central focus of this course. Programming emphasis centers on Ladder (LAD) and Statement List (STL) logic, with an introduction to Structured Control Language (SCL) and S7-GRAPH. Both direct and indirect addressing are an integral part of the course.
The core issues of efficient use of CPU resources, establishing communications, passing information, and managing integrated diagnostics are included. Skills in error management and extended diagnostics are reinforced throughout this agenda. This course includes classroom instruction, demonstration, and considerable hands-on lab work.

TIA Portal Programming 3

Course code: US-PTTIAP3A

Target groups: Engineer

Description: This course is the third in a three-part series which increases advanced skills with Siemens SIMATIC TIA Portal. Students will learn to leverage the power of TIA Portal software with advanced structured programming techniques. A systems approach to efficiently programming the S7-1500, S7-1200, S7-300, and S7- 400 PLC is covered. Students will expand their knowledge regarding the reusability of STEP 7 blocks and their storage in user libraries while gaining an introduction to programming languages statement list (STL), Structured Control Language (SCL) and S7-GRAPH.
The core issues of efficient use of CPU resources, establishing communications, passing information, and managing integrated diagnostics are included. This course includes classroom instruction, demonstration, and considerable hands-on lab work.

Siemens Certified Programmer in TIA Portal

Course code: CPT-FAP

Target groups: Programmer

Description: This hands-on, instructor-led course provides a focused review and skills refresher of topics taught in TIA Portal Programming 1, 2, and 3 courses. This course is intended to prepare the student for the Siemens Certified Programmer Test scheduled on the last day.

Discrete Automation

TIA Portal / S7-1200 / S7-1500: Engineering Core

SIMATIC Motion Control 1 - TIA Portal

Course code: US-PTTIAMC1A

Target groups: Commissioning ; Engineer

Description: In this technology course, attendees will program the SIMATIC S7-1500 or S7-1200 controllers in the TIA Portal. They will be able to precisely control the motion of axes with the integrated motion control functions while learning step by step the benefits and use of these functions. After each learning step, attendees will deepen their knowledge through hands-on programming. After attending the course, they will understand the interaction of the technological functions. Each learner will be able to select and configure appropriate technology objects, such as speed axis, positioning axis, and synchronous axis, as well as integrate them into the program.
The motion control function of standard CPUs is seamlessly extended with technology CPUs. In the SCT-PTTIAMC2A course, learners will work with the T-CPU and learn the benefits of functions such as absolute synchronous operation and camming.

SIMATIC Motion Control 2 - TIA Portal

Course code: US-PTTIAMC2A

Target groups: Programmer

Description: Using the motion control functions of the SIMATIC S7-1500 technology CPU, the learner will be able to extend applications with absolute synchronous axes or camming. In this technology course, attendees learn step by step the benefits and use of these functions. After learning each step, attendees will deepen their knowledge through hands-on programming.
After completing the course, the learners understand how camming works and can efficiently assign parameters for technology objects.

TIA Portal Advanced Troubleshooting

Course code: US-PTTIATBL

Target groups: Maintenance ; Engineer

Description: This course is for experienced TIA Portal-1200/1500 PLC Maintenance Technicians, Service Technicians, and Service Engineers. Learners will expand their knowledge in diagnostic troubleshooting using Siemens TIA Portal Totally Integrated Automation Software. This is an advanced course focused on diagnostic troubleshooting using Siemens TIA Portal Totally Integrated Automation Software. Learners will expand their knowledge on how to troubleshoot, diagnose, and repair programming and hardware configuration issues within Siemens 1200/1500 PLC's. This course includes classroom instruction, demonstration, and considerable hands-on lab work.

TIA Portal Programming with SCL

Course code: US-PTSCLP3A

Target groups: Maintenance ; Engineer

Description: This course provides an in-depth look at Totally Integrated Automation Portal (TIA Portal) to inform participants about the working environment for end-to-end engineering with SIMATIC STEP 7 and SIMATIC WinCC. Participants will explore the complete language and performance scope of the Structured Control Language (SCL) development environment. Using simple examples, we will show you the advantages offered by high-level programming of SIMATIC S7-1500. During the training course, you will create, commission, and test your own SCL programs. This is a hands-on course filled with programming exercises in SCL.
Participants should have a solid working knowledge of STEP7, SIMATIC TIA Portal, and the basic diagnostics and editor tools. Learners will use advanced software tools of STEP7 to complete system integration programming, troubleshooting, and functional testing of applications. After the course, the learner will be able to reduce the amount of time spent on creating and maintaining programs through the use of a high-level programming language (SCL) instead of Statement List (STL).

Discrete Automation

TIA Portal / S7-1200 / S7-1500: Engineering Core

TIA Portal Safety Engineering

Course code: US-PTSFTE1A

Target groups: Maintenance ; Engineer

Description: This course introduces the student to a Siemens Distributed Safety PLC application. Participants receive knowledge on applying the system per relevant standards, Failsafe Hardware Module details and parameterization, Safety Program structure and implementation, Safety Communications, System Diagnostics and introduction to Drive Safety .The course format is a combination of instruction and hands-on exercises. A realistic model is used for demonstrations and student exercises. Exercises allow students to practice tasks such as configuration, programming, and code debugging.

SIMATIC S7, Graphical Programming with CFC

Course code: ST-7CFC

Description:

SIMIT in Discrete Automation Technology for Beginners

Course code: DI-SIMITFA

Target groups: Programmer

Description: This course gives you an overview of the functions and libraries of the SIMIT simulation software. Using practical examples, you will learn step-by-step how to design simulations/models for testing automation software. SIMIT enables the comprehensive simulation of machine and plant behavior for virtual commissioning. With the help of the components integrated in SIMIT, you can test your PLC code to thereby produce the highest quality and establish your new products on the market much faster.

SIMOVE Carrier Control

Course code: AGV-SIMCC

Target groups: Commissioning ; Engineer ; Maintenance ; Programmer

Description: SIMOVE is the standardized system platform for AGV applications and solution of Siemens. The SIMOVE system comprises the use of standard automation and drives components and tailored software tools and libraries. SIMOVE enables system flexibility and scalability thanks to a modular architecture and open interfaces.

Included in the course price: Free access to the digital learning platform SITRAIN access – starting one week before the start of the course until two weeks after the end of the course. With the Learning Membership, you can deepen or repeat the content of this Learning Event as well as continue your education on other interesting topics. The Learning Membership starts 7 days before the start of the course and ends 14 days after the end of the course. During this period, you have access to all of the more than 480 web-based training available.

Discrete Automation

TIA Portal / S7-1200 / S7-1500: Engineering Core

SIMOVE Advanced Navigation System Plus (ANS+)

Course code: AGV-SIANS

Target groups: Commissioning ; Engineer ; Programmer ; Maintenance

Description: SIMOVE is the standardized system platform for AGV applications and solution of Siemens. The SIMOVE system comprises the use of standard automation and drives components and tailored software tools and libraries. SIMOVE enables system flexibility and scalability thanks to a modular architecture and open interfaces. This online module includes the SIMOVE ANS+ software for laser-based navigation.
Included in the course price: Free access to the digital learning platform SITRAIN access – starting one week before the start of the course until two weeks after the end of the course. With the Learning Membership, you can deepen or repeat the content of this Learning Event as well as continue your education on other interesting topics. The Learning Membership starts 7 days before the start of the course and ends 14 days after the end of the course. During this period, you have access to all of the more than 480 web-based trainings available.

BRAUMAT / SISTAR

Course code: US-TIABRAU

Target groups: Maintenance ; Programmer

Description: BRAUMAT/SISTAR is training directly from the manufacturer. Can-do is better than know-how. Due to the many practical exercises, you will be able to master BRAUMAT/SISTAR after the course. Form your own impression of its capabilities.

OPC UA System Course

Course code: IK-OPCSYS

Target groups: Programmer ; Maintenance ; Engineer ; Commissioning

Description: This training offers you a detailed introduction into the basic concepts of the OPC UA system and its interfaces. You will learn the terminology behind the abstract model and test your understanding of all OPC UA capable components. You will also learn about the most important OPC UA servers and clients in the SIMATIC product portfolio. A continuous exercise will lead you gradually to a communication model that is solely based on OPC UA communication.

SIEMENS

Discrete Automation: *TIA Portal / S7-1200 / S7-1500*
Maintenance Learning Map

Workforce Development

- Siemens Cooperates with Education (SCE)
- Siemens Mechatronic Systems Certification Program (SMSCP)
- quickSTEP Courses
- Online Self-Paced Learning
- SITRAIN Access
- Introduction to TIA Portal and Diagnostics

Formal Learning (Deep Dive)

- AB to S7 Service Technician in TIA Portal
- TIA Portal Service 1
- TIA Portal Service 2
- SIMATIC Motion Control 1 - TIA Portal
- SIMATIC Motion Control 2 - TIA Portal

Performance Assist Tools

- How-to Video Library
- Simulation Systems
- Virtual Mentoring

Advanced Learning

- Siemens TIA Portal Certified Service Technician Level 1
- TIA Portal Advanced Troubleshooting
- TIA Portal Safety Sustaining

Discrete Automation

TIA Portal / S7-1200 / S7-1500: Maintenance

Introduction to TIA Portal and Diagnostics

Course code: US-PTBADIA

Target groups: Engineer ; Maintenance

Description: This course is an introduction to the TIA Portal Development Environment and is an ideal preparation for the TIA Portal Programming 1 or TIA Portal Service 1 courses. This course helps students unlock the potential for increased productivity by building foundational concepts and diagnostic skills. Students will learn how to apply those skills to create or open existing projects, navigate work screens and informational cross-referencing, identify CPU and I/O hardware specifications, and conduct initial hardware diagnostics in TIA Portal. This is a face-to-face, instructor-led course consisting of in-class instruction and exercises.

Recommendation: Students familiar with programming in Allen Bradley software should attend the AB to TIA Portal course (SCT-PTABSP1A in person or virtual instructor-led SCT-PTOILABSP1A).

AB to S7 Service Technician in TIA Portal

Course code: US-TIAABSV1

Target groups: Programmer ; Engineer

Description: This course acknowledges the automation experience of the students and delivers must-know, basic topics to experienced technicians / engineers interested in Siemens SIMATIC STEP 7 TIA Portal software. This course moves technicians / engineers / programmers quickly into the power of the STEP 7 TIA Portal engineering tool. Multiple STEP 7 program editors are presented demonstrating the flexibility and fully integrated features of STEP 7. The course teaches Siemens STEP7 TIA Portal Software recognizing the previous experience students have with Allen-Bradley platforms. The instructor has familiarity with AB platforms and software from which they directly relate to the questions and experiences of students in the class.

This course concentrates on STEP 7 software, program structures, System Functions, advanced block libraries and custom block design. STEP 7 engineering tools and programming instructions are demonstrated to guide the student through the development of a realistic application. The course format consists of instruction, demonstration, and hands-on exercises. Students utilize test, debug and diagnostic tools to complete extensive programming exercises.

TIA Portal Service 1

Course code: US-PTTIAS1A

Target groups: Maintenance

Description: TIA Portal Service 1 teaches the basic S7 system concept, hardware configuration, parameterization, S7 software (SIMATIC TIA Portal) basics, and an overview of programming fundamentals. Human Machine Interface (HMI) and PROFINET IO basics are also included. Numerous hands-on exercises using a Totally Integrated Automation (TIA) plant model to reinforce practical experience and theoretical knowledge. The TIA plant model consists of an S7-1500 automation system, ET200SP distributed I/O, SIMATIC Comfort Panel, and a conveyor model. Students experience and learn TIA Portal concepts and gain an understanding of the relationships between key industrial automation components. Upon completion of the course, students are able to utilize STEP 7 tools and techniques to accurately recognize, diagnose, and remedy control system faults; reducing costly downtimes. Modular in design, this course is fully customizable for those interested in on-site training. Topics are designed for adjustments to meet plant specific needs. Call 1.800.241.4453 for more details. After the course, students seeking extended TIA Portal service skills sets should attend TIA Portal Service 2 course.

Students needing additional skills in S7 system sustaining to include basic program modifications and advanced systems diagnostics should consider the SIMATIC TIA Portal Service 2 course.

TIA Portal Service 2

Course code: US-PTTIAS2A

Target groups: Maintenance ; Commissioning

Description: This course is designed for S7-1500 and S7-1200 PLC users with basic SIMATIC control system knowledge, who install or maintain automation systems and their application programs on the TIA Portal Platform. This course consists of instructor led training and hands-on exercises to continue skill development in troubleshooting, diagnostics, and modifying hardware and software components of a SIMATIC control system. Control System Hardware consists of an S7-1500 rack with ET200SP remote IO, Comfort Panel HMI, G120 Drive and a moving conveyor system. Participants will use SIMATIC TIA Portal software tools to build new features, diagnostics and communications into the application project. Program development using organization blocks, system functions and instruction libraries build software troubleshooting

efficiency. Analog signal processing and alarming are included in this application. Configuration and integration of an HMI and Drive system into the student project, give experience managing a Totally Integrated Automation (TIA) project. An introduction to Structured Control Language (SCL) and sequence control in SIMATIC S7-GRAPH are included.

Discrete Automation

TIA Portal / S7-1200 / S7-1500: Maintenance

SIMATIC Motion Control 1 - TIA Portal

Course code: US-PTTIAMC1A

Target groups: Commissioning ; Engineer

Description: In this technology course, attendees will program the SIMATIC S7-1500 or S7-1200 controllers in the TIA Portal. They will be able to precisely control the motion of axes with the integrated motion control functions while learning step by step the benefits and use of these functions. After each learning step, attendees will deepen their knowledge through hands-on programming. After attending the course, they will understand the interaction of the technological functions. Each learner will be able to select and configure appropriate technology objects, such as speed axis, positioning axis, and synchronous axis, as well as integrate them into the program.
The motion control function of standard CPUs is seamlessly extended with technology CPUs. In the SCT-PTTIAMC2A course, learners will work with the T-CPU and learn the benefits of functions such as absolute synchronous operation and camming.

SIMATIC Motion Control 2 - TIA Portal

Course code: US-PTTIAMC2A

Target groups: Programmer

Description: Using the motion control functions of the SIMATIC S7-1500 technology CPU, the learner will be able to extend applications with absolute synchronous axes or camming. In this technology course, attendees learn step by step the benefits and use of these functions. After learning each step, attendees will deepen their knowledge through hands-on programming.
After completing the course, the learners understand how camming works and can efficiently assign parameters for technology objects.

Siemens TIA Portal Certified Service Technician Level 1

Course code: US-PTSVCR2A

Target groups: Engineer

Description: Automation engineering and technology advancement towards Totally Integrated Automation solutions no longer exclusively include programmable logic controllers (PLCs). Today, it also includes industrial communication, operator control, monitoring, security technology, and the connection of drives. Skills from SIMATIC service basic training will be refreshed and consolidated over four days. On the fifth day, one may take the examination. The test is on day five to qualify as a level one Siemens certified SIMATIC Technician.
The practical assessment includes the commissioning of the hardware of a PLC, a simple PLC program, and the components of Totally Integrated Automation. After passing the examination successfully, the newly certified technician will receive a certificate proving level one specialist knowledge.

TIA Portal Advanced Troubleshooting

Course code: US-PTTIATBL

Target groups: Maintenance ; Engineer

Description: This course is for experienced TIA Portal-1200/1500 PLC Maintenance Technicians, Service Technicians, and Service Engineers. Learners will expand their knowledge in diagnostic troubleshooting using Siemens TIA Portal Totally Integrated Automation Software. This is an advanced course focused on diagnostic troubleshooting using Siemens TIA Portal Totally Integrated Automation Software. Learners will expand their knowledge on how to troubleshoot, diagnose, and repair programming and hardware configuration issues within Siemens 1200/1500 PLC's. This course includes classroom instruction, demonstration, and considerable hands-on lab work.

Discrete Automation

TIA Portal / S7-1200 / S7-1500: Maintenance

TIA Portal Safety Sustaining

Course code: US-PTSFTP2A

Target groups: Maintenance

Description: This course introduces the student to a Siemens Distributed Safety PLC application. Participants build skills on commissioning, troubleshooting, and upgrading an automation safety system. Functional safety principles, sensor-actuator connections, and device configuration of the S7-1500F and ET 200SP are covered, as well as restoring the system and programming the safety blocks. The course format is a combination of instruction and hands-on exercises. A realistic model is used for demonstrations and student exercises. Exercises allow students to practice tasks such as testing, debugging, and using diagnostic tools.

SIEMENS

Discrete Automation

SIMATIC HMI with TIA Portal Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)

Siemens Mechatronic Systems Certification Program (SMSCP)

quickSTEP Courses

Online Self-Paced Learning

SITRAIN Access

Formal Learning (Deep Dive)

SIMATIC WinCC Unified 1, Systems

SIMATIC WinCC Unified 2, Advanced

TIA Portal WinCC Professional Configuration (SCADA)

SIMATIC WinCC, System Course

Performance Assist Tools

How-to Video Library

Simulation Systems

Virtual Mentoring

Discrete Automation: SIMATIC HMI with TIA Portal

SIMATIC WinCC Unified 1, Systems

Course code: US-TIA-UWCC1

Target groups: Maintenance ; Programmer ; Operator ; Engineer ; Commissioning

Description: This course is relevant for personnel who are tasked with creating and/or editing HMI projects. This includes Programmers, Operators, Commissioning Engineers, Configuration Engineers, Maintenance Personnel, Repair Personnel, and Service Personnel. SIMATIC WinCC Unified is the new visualization system in the TIA Portal. The system is convincing due to the use of native web technologies, which are introduced to you in this course. You will also learn the high degree of openness through high-performance interfaces. Learn how to use WinCC Unified and the new Unified Comfort Panels and get a personal impression of the performance of new devices. The training is aimed at first-time users of WinCC Unified and Unified Comfort Panels. The elementary basics and configuration steps are taught.

SIMATIC WinCC Unified 2, Advanced

Course code: US-TIA-UWCC2

Target groups: Programmer ; Maintenance ; Operator ; Engineer ; Commissioning

Description: This course is relevant for personnel who are tasked with creating and/or editing HMI projects. This includes Programmers, Operators, Commissioning Engineers, Configuration Engineers, Maintenance Personnel, Repair Personnel, and Service Personnel who want to learn more about WinCC Unified in the SCADA environment. Building on the system course (TIA-UWCC1), course topics are conveyed based on WinCC Unified PC Runtime. Upon completion of the course, you will be able to use WinCC Unified PC Runtime with confidence and create your own HMI / SCADA projects with WinCC Unified Engineering. The course involves creating and/or editing HMI projects for the WinCC Unified PC Runtime. Students will expand on the skills learned in the System Course and will provide students with a great deal of new information so that they can work confidently with WinCC Unified and WinCC Unified PC Runtime.

TIA Portal WinCC Professional Configuration (SCADA)

Course code: US-PTWCSP1A

Target groups: Programmer ; Engineer ; Maintenance

Description: This course is for PLC users with engineering or maintenance experience who will be designing and configuring automation systems and their application programs using Siemens TIA Portal Windows Control Center (WinCC) Professional SCADA (Supervisory Control and Data Acquisition). Using a model application, this course provides a system overview of WinCC Professional with emphasis on its capabilities and special features. Detailed configuration procedures will be studied in an order compatible with the typical development of an industrial application. Participants will learn the correct development process beginning with creating a project and concluding with reporting and printing. During this course, examples of programs will be written to take advantage of WinCC open architecture. Throughout this course lecture materials are complimented with hands-on exercises which build a working WinCC Professional application.

SIMATIC WinCC, System Course

Course code: ST-BWINCCS

Target groups: Programmer ; Engineer

Description: This course is for PLC users with engineering and/or previous HMI experience who will be creating and commissioning HMI / SCADA applications using Siemens Windows Control Center (WinCC). Using a model application, this course provides a system overview of WinCC with emphasis on its capabilities and special features. Detailed configuration procedures will be studied in an order compatible with the typical development of an industrial application. Students will learn the correct development process beginning with creating a project and concluding with reporting and printing. Examples of programs that can be written to take advantage of WinCC open architecture are discussed. Throughout this course lecture materials are complimented with hands-on exercises which build a working WinCC application.

SIEMENS

Discrete Automation

SIMATIC HMI Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)

Siemens Mechatronic Systems Certification Program (SMSCP)

quickSTEP Courses

Online Self-Paced Learning

SITRAIN Access

Formal Learning (Deep Dive)

WinCC Flexible with HMI Lite

SIMATIC WinCC, System Course

Performance Assist Tools

How-to Video Library

Simulation Systems

Virtual Mentoring

Discrete Automation: SIMATIC HMI

WinCC Flexible with HMI Lite

Course code: US-S7TLWM1A

Target groups: Maintenance ; Engineer ; Programmer

Description: This course is for users who develop, install or maintain automation systems and their application programs when using the Siemens HMI Lite automation concept. The first three days of this course covers WinCC Flexible for systems using the SIMATIC Operator Panels. The remaining course time covers the HMI Lite automation concept for SINUMERIK systems. HMI Lite is a concept, developed by Siemens AG, aimed at the automation of the production and assembly of automobile engines, axles, and transmissions. Though developed for the Automotive Industry, the HMI Lite concept is adaptable to any automation solution. The Siemens' SIMATIC®, SINUMERIK®, and SINAMICS® product lines are the basis of this concept. When HMI Lite is selected as the automation solution, the Siemens staff develops the desired automation solution, including the communications, software, engineering, training, spare parts and service, tailored to the respective production areas and to the specific project requirements.

SIMATIC WinCC, System Course

Course code: ST-BWINCCS

Target groups: Programmer ; Engineer

Description: This course is for PLC users with engineering and/or previous HMI experience who will be creating and commissioning HMI / SCADA applications using Siemens Windows Control Center (WinCC). Using a model application, this course provides a system overview of WinCC with emphasis on its capabilities and special features. Detailed configuration procedures will be studied in an order compatible with the typical development of an industrial application. Students will learn the correct development process beginning with creating a project and concluding with reporting and printing. Examples of programs that can be written to take advantage of WinCC open architecture are discussed. Throughout this course lecture materials are complimented with hands-on exercises which build a working WinCC application.

SIEMENS

Discrete Automation
NETWORKING Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)

Siemens Mechatronic Systems Certification Program (SMSCP)

quickSTEP Courses

Online Self-Paced Learning

SITRAIN Access

Formal Learning (Deep Dive)

PROFINET with Industrial Ethernet in the TIA Portal

Performance Assist Tools

How-to Video Library

Simulation Systems

Virtual Mentoring

Discrete Automation: NETWORKING

PROFINET with Industrial Ethernet in the TIA Portal

Course code: IK-TIAPN

Target groups: Maintenance ; Programmer

Description: This course is for PLC users who will be responsible for the maintenance, configuration, planning, and/or commissioning of automation Ethernet networks with PROFIBUS. Siemens, a member of PROFIBUS International (PI), offers you the opportunity to gain experience about the future-oriented PROFINET, the open Industrial Ethernet standard for automation.
Through a deeper understanding of Ethernet and PROFIBUS mechanics along with SIMATIC NET components, you will learn how to parameterize, commission, and troubleshoot a PROFINET network quickly and effectively. Numerous practical exercises reinforce the acquired theoretical knowledge.

SIEMENS

Digital Enterprise Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)

Siemens Mechatronic Systems Certification Program (SMSCP)

quickSTEP Courses

Online Self-Paced Learning

SITRAIN Access

Formal Learning (Deep Dive)

SIMIT in Process Automation

SIMIT in Discrete Automation Technology for Beginners

OPC UA System Course

Virtual Commissioning

Optimal Data Usage in Manufacturing with Industrial Edge

VASS 6 OEM Workshop for Beginners

Performance Assist Tools

How-to Video Library

Simulation Systems

Virtual Mentoring

Digital Enterprise

SIMIT in Process Automation

Course code: ST-PCS7SIM

Target groups: Programmer ; Sales

Description: This course provides you a summary of the functions and libraries of the simulation software SIMIT. By practical exercises you will learn about the design of simulations / simulation models for testing the PCS 7 automation software.
The perfect interplay of all components integrated in SIMIT enables you to produce more in the highest quality durably and to establish new products on the market considerably faster.

SIMIT in Discrete Automation Technology for Beginners

Course code: DI-SIMITFA

Target groups: Programmer

Description: This course gives you an overview of the functions and libraries of the SIMIT simulation software. Using practical examples, you will learn step-by-step how to design simulations/models for testing automation software. SIMIT enables the comprehensive simulation of machine and plant behavior for virtual commissioning. With the help of the components integrated in SIMIT, you can test your PLC code to thereby produce the highest quality and establish your new products on the market much faster.

OPC UA System Course

Course code: IK-OPCSYS

Target groups: Programmer ; Maintenance ; Engineer ; Commissioning

Description: This training offers you a detailed introduction into the basic concepts of the OPC UA system and its interfaces. You will learn the terminology behind the abstract model and test your understanding of all OPC UA capable components. You will also learn about the most important OPC UA servers and clients in the SIMATIC product portfolio. A continuous exercise will lead you gradually to a communication model that is solely based on OPC UA communication.

Virtual Commissioning

Course code: DI-VIRTCOM

Target groups: Programmer ; Engineer ; Commissioning

Description: Today's technologies are so complex that training on the software and the appropriate training equipment is almost indispensable to keep up to date. This course targets project engineers, project planners and programmers of mid-level and big industries, who deal with the design and virtual commissioning of machines. The documentation and course work provides you with an overview of the interaction among the various software packages such as NX, MCD, TIA Portal, PLCSIM Advanced and SIMIT.
New possibilities for the interaction of design and automation, from serial processes to parallel work. Automation can already begin and be tested during the design phase. The interaction of design and automation allows initial tests and virtual commissioning in the office without the need for a real machine or PLC.

Digital Enterprise

Optimal Data Usage in Manufacturing with Industrial Edge

Course code: IE-ONBOARD

Target groups: Programmer ; Engineer ; Reliability

Description: Participants should have basic knowledge of IT standards and application and be familiar with the principles of factory automation, machine data analysis, and cyber-security. The goal of this course is to provide experienced users, familiar with Automation system environments, with hands-on knowledge and skills training on the TIA Industrial Edge System.
The course will cover using a preconfigured TIA Portal Project running in PLCSIM Advanced as the automation system. The key Industrial Edge learning subjects will include the content in the Objectives section.

VASS 6 OEM Workshop for Beginners

Course code: CT-VAS6OEE

Target groups: Commissioning ; Programmer ; Engineer ; Maintenance

Description: Volkswagen OEM PLC programmers, commissioning engineers or configuration engineers responsible for the maintenance, configuration, commissioning and/or planning of TIA Portal projects using the VASS V06 Standard. TIA Portal is the base platform used; however, the concepts and practices are transferable to other platforms. This virtual, instructor led workshop is for PLC users who will be responsible for the planning, configuration, commissioning and/or maintenance of automation projects and programs using the Volkswagen VASS V06 Standard.

SIEMENS

Machine Tool

Power Line / HMI Advanced Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)

Siemens Mechatronic Systems Certification Program (SMSCP)

quickSTEP Courses

Online Self-Paced Learning

SITRAIN Access

Formal Learning (Deep Dive)

S7 Programming 1

840Dpl Maintenance 1 w/HMI Advanced

840Dpl Maintenance 2 w/HMI Advanced

Performance Assist Tools

How-to Video Library

Simulation Systems

Virtual Mentoring

SIEMENS

Machine Tool

Solution Line / HMI Advanced / HMI Operate Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)

Siemens Mechatronic Systems Certification Program (SMSCP)

quickSTEP Courses

Online Self-Paced Learning

SITRAIN Access

Formal Learning (Deep Dive)

840Dsl Maintenance 1 w/ Operate

840Dsl Maintenance 2 w/ Operate

840Dsl Operations & Programming 1 w/HMI Operate

Performance Assist Tools

How-to Video Library

Simulation Systems

Virtual Mentoring

Advanced Learning

840Dsl Safety Integrated Maintenance

840Dsl Safety Integrated for OEMs

Machine Tool: Solution Line / HMI Advanced / HMI Operate

840Dsl Maintenance 1 w/ Operate

Course code: US-SNSLM1A-OP

Target groups: Maintenance

Description: This course is designed for electrical/electronic end-user maintenance personnel for machine tools using the SINUMERIK 840Dsl (Solution Line) controls. This course presumes the customer is using an HMI with either the PCU 50 or TCU (Thin Client Unit) hardware, and the SINUMERIK Operate software. This course emphasizes the maintenance aspects of this version of the SINUMERIK 840D. An overview of the soft key menus of the control is provided, including the basic principles of operating the control. Demonstrations are given on how to competently manage maintenance functions, and for back-up/restore functions of the NC, PLC and PROFIBUS Drive series start-up archive files. The class format is a mixture of lecture and hands-on exercises. SINUMERIK 840Dsl simulators are utilized to allow the student to build proficiency in control navigation and managing different forms of data. This course does NOT cover the SIMATIC S7 PLC programming language.

840Dsl Maintenance 2 w/ Operate

Course code: US-SNSLM2A-OP

Target groups: Maintenance ; Engineer

Description: This advanced maintenance course is designed for electrical/electronic end user maintenance personnel and supporting manufacturing/production engineers who wish to know more about the SINUMERIK 840Dsl (Solution Line) CNC Controls. This course presumes the customer is using an HMI with either the PCU 50 or TCU (Thin Client Unit) hardware, and the SINUMERIK Operated software. This course includes information regarding system hardware, system software, configuration, and commissioning procedures related to both the 840Dsl and its integrated SINAMICS S-120 drive system. Course format is a mixture of lecture and hands-on exercises. SINUMERIK 840Dsl simulators are utilized to allow the student to build proficiency with the hardware and software systems. A review of the procedures for complete system backup and restoration will also be conducted.

840Dsl Operations & Programming 1 w/HMI Operate

Course code: US-SNSLP1A-OP

Target groups: Programmer ; Operator

Description: This in person course is for Operator/Programmers of CNC machines that utilize the new SINUMERIK 840Dsl (Solution Line) controls. This course presumes the customer is using the PCU 50.3 or an HMI TCU (Thin Client Unit), with the SINUMERIK HMI Operate interface. This course provides a complete overview of the soft key menus of the SINUMERIK 840Dsl (Solution Line) controls describing the basic principles of CNC operation along with the generation of a basic CNC part program. Demonstrations are given on how to create and manage part programs, define offsets and user data, save, and restore programs and user data. Class format is predominately exercises conducted in a virtual environment. Access to fully functional software and tools are provided through a cloud-based application. Students use SINUMERIK 840Dsl CNC simulators to build proficiency in moving through various menus, creating and managing part programs, and setting and editing work, tool offsets, and user data.

Class format is predominately exercises conducted in a virtual environment. Access to fully functional software and tools are provided through a cloud-based application. Students use SINUMERIK 840Dsl CNC simulators to build proficiency in moving through various menus, creating and managing part programs and setting and editing work, tool offsets and user data.

840Dsl Safety Integrated Maintenance

Course code: US-SNSLSM1A

Target groups: Maintenance ; Engineer

Description: This advanced course is designed for controls engineers and service specialists who use the SINUMERIK 840Dsl and Safety Integrated (SI) functions in machine tool applications. This course provides the knowledge and skills that controls engineers and/or maintenance technicians require for familiarization and the operation of an automated machine tool, equipped with a SINUMERIK 840Dsl CNC which uses the optional Safety Integrated System. The goal of the class is to teach the students to identify the several types of applications associated with the Safety Integrated System, to achieve a working knowledge of the concepts, and to identify and diagnose Safety Integrated related problems. The course

format is a combination of instruction and hands-on exercises. The hands-on exercises provide exposure to a SINUMERIK 840Dsl CNC, its system components, connections, start up, and operation. Students will perform practical exercises related to service and troubleshooting of the system, with emphasis on the Safety Integrated aspects of the 840D.

The course format is a combination of instruction and hands-on exercises. The hands-on exercises provide exposure to a SINUMERIK 840Dsl CNC, its system components, connections, start up, and operation. Students will perform practical exercises related to service and troubleshooting of the system, with emphasis on the Safety Integrated aspects of the 840D.

SIEMENS

Machine Tool

SINUMERIK ONE Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)

Siemens Mechatronic Systems Certification Program (SMSCP)

quickSTEP Courses

Online Self-Paced Learning

SITRAIN Access

Formal Learning (Deep Dive)

SINUMERIK ONE Service

SINUMERIK ONE Safety Integrated F-PLC Service

SINUMERIK ONE Commissioning

SINUMERIK ONE Safety Integrated F-PLC Startup

Performance Assist Tools

How-to Video Library

Simulation Systems

Virtual Mentoring

Machine Tool: SINUMERIK ONE

SINUMERIK ONE Service

Course code: NC-ONE-SERV

Target groups: Maintenance

Description: This course is designed for electrical/electronic end-user maintenance personnel for machine tools using the Siemens SINUMERIK ONE CNC control. This course presumes the customer is using an HMI with IPC or ITC hardware, and the SINUMERIK HMI OPERATE software. This course emphasizes the maintenance aspects of the SINUMERIK ONE. An overview of the soft key menus of the control is provided, including the basic principles of operating the control. Demonstrations are given on how to competently manage maintenance functions, and on back-up/restore functions of the NC, PLC and PROFIBUS Drive using series start-up archive files .The class format is a mixture of lecture and hands-on exercises. SINUMERIK ONE simulators are utilized to allow the student to build proficiency in control navigation and managing different forms of data.

SINUMERIK ONE Commissioning

Course code: NC-ONE-COM

Target groups: Other ; Maintenance

Description: This course emphasizes the commissioning aspects of the SINUMERIK ONE. An overview of the requirements for commissioning the control is provided. Demonstrations are given on how to competently manage commissioning functions of the PLC, NC and Drives. The class format is a mixture of lecture and hands-on exercises. SINUMERIK ONE simulators are utilized to allow the student to build proficiency in control navigation and managing different forms of data.

This course does NOT cover the SIMATIC TIA Portal programming language. It is recommended that all SINUMERIK ONE maintenance personal enroll in SIMATIC TIA Portal Programming 1 or SIMATIC TIA Portal Service classes

SINUMERIK ONE Safety Integrated F-PLC Startup

Course code: US-SNONESUF

Target groups: Engineer ; Maintenance ; Commissioning

Description: This advanced course is designed for controls engineers and service specialists who configure and commission the SINUMERIK ONE Safety Integrated F-PLC functions in machine tool applications. The student will receive a certificate after successfully completing the course. During this course, the student will learn about configuring and commissioning the Safety Integrated F-PLC using the SINUMERIK ONE. Practical exercises with Siemens simulators concerning configuring, commissioning, and servicing will be a major part of this training course. At the end of the course, the learner will be familiar with Safety Integrated F-PLC using SINUMERIK ONE. The student will learn to independently configure, test, and commission specific installation configurations with safety functions. This enables the learner to make full use of the advantages of Safety Integrated F-PLC on the machine tool. The course format is a combination of instruction and hands on exercises. Students will perform practical exercises related to configuring and commissioning the Safety Integrated F-PLC aspects of the SINUMERIK ONE.

This course does NOT cover the SIMATIC TIA Portal programming language. It is recommended that all SINUMERIK ONE maintenance personal enroll in SIMATIC TIA Portal Programming 1 or SIMATIC TIA Portal Service classes

SIEMENS

Drives & Motion
SINAMICS Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)
Siemens Mechatronic Systems Certification Program (SMSCP)
quickSTEP Courses
Online Self-Paced Learning
SITRAIN Access

Formal Learning (Deep Dive)

SINAMICS S120 - Parameterizing and Commissioning with STARTER
SINAMICS S120/G120 Maintenance and Troubleshooting - STARTER
SINAMICS G120 - Parameterizing and Commissioning
SINAMICS G150 / G130 / S150 - Diagnostics and Service
SINAMICS 6RA80 DCM Setup and Maintenance
SINAMICS G120 Basic Maintenance - Using STARTER
SINAMICS G120 Basic - TIA Portal Startdrive
SINAMICS S120 Basic Maintenance - STARTER

Performance Assist Tools

How-to Video Library
Simulation Systems
Virtual Mentoring

Drives & Motion: SINAMICS

SINAMICS S120 - Parameterizing and Commissioning with STARTER

Course code: DR-S12-PM

Target groups: Maintenance ; Engineer

Description: This course is intended to provide knowledge and skills related to the SINAMICS S drive as it pertains to commissioning, operation, configuration, maintenance, diagnostics, and troubleshooting. It is formatted as a combination of instruction and carefully structured, hands-on exercises aimed at developing job-related knowledge and skills.

SINAMICS S120/G120 Maintenance and Troubleshooting - STARTER

Course code: US-AUSNSM1A

Target groups: Maintenance

Description: This course provides maintenance level training on Siemens SINAMICS S120 and G120 drive systems. The course includes an overview of AC Drive power structures, system hardware, basic commissioning steps, and basic steps for configuring and troubleshooting. A heavy emphasis is placed on troubleshooting using various methods and test equipment. The use of the Siemens diagnostic and engineering software tool (STARTER) is demonstrated and practiced extensively throughout the week.
Although commissioning and configuration of the system is not the primary focus of the course, the student will perform basic lab-guided commissioning using various wizard tools to create a simple system. The student will learn to maintain the system settings by creating various backups, followed by actual restoration of the system. Interpretation of Fault and Alarm codes and LEDs and proper troubleshooting steps is a primary goal, as well as necessary steps for component replacement in the event of a hardware failure. Actual component replacement steps will be discussed, but not performed as the training units are not designed for easy access to hardware. The course format is a combination of instruction and hands-on exercises aimed at developing job-related knowledge and skills.

SINAMICS G120 - Parameterizing and Commissioning

Course code: DR-G12-PM

Target groups: Maintenance ; Engineer

Description: This course is intended to provide knowledge and skills related to the SINAMICS G120 as it pertains to hardware identification, commissioning, operation, configuration, maintenance, diagnostics, and troubleshooting. Interconnections with the G120 – Computer – PLC will be utilized in the session. It is formatted as a combination of instruction and carefully structured, hands-on exercises aimed at developing job-related knowledge and skills.

SINAMICS G150 / G130 / S150 - Diagnostics and Service

Course code: DR-G15-DG

Target groups: Engineer ; Maintenance

Description: This course is for engineering and maintenance personnel responsible for installing, maintaining, and troubleshooting drive systems that utilize the SINAMICS G130/G150 Drive This course is intended to provide knowledge and skills related to the SINAMICS G130/G150 drive as it pertains to commissioning, operation, configuration, maintenance, diagnostics, and troubleshooting. It is formatted as a combination of instruction and carefully structured, hands-on exercises aimed at developing job related knowledge and skills.

Drives & Motion: SINAMICS

SINAMICS 6RA80 DCM Setup and Maintenance

Course code: US-DVDCMM1A

Target groups: Maintenance ; Engineer

Description: This course is intended to provide knowledge and skills related to the 6RA80 SINAMICS DC MASTER or DCM Control Module as it pertains to commissioning, operation, configuration, maintenance, diagnostics, and troubleshooting. It is formatted as a combination of instruction and carefully structured, hands-on exercises aimed at developing job-related knowledge and skills.

SINAMICS G120 Basic Maintenance - Using STARTER

Course code: US-DVG12M1A

Target groups: Maintenance

Description: This course is intended for Personnel responsible for the long-term maintenance and diagnostics of the Siemens Drive.

SINAMICS G120 Basic - TIA Portal Startdrive

Course code: US-DVGPTM1A

Target groups: Maintenance

Description:

SINAMICS S120 Basic Maintenance - STARTER

Course code: US-DVS12M1A

Target groups: Maintenance

Description: This course is intended to provide knowledge and skills related to the SINAMICS S drive as it pertains to operation, maintenance, diagnostics, and troubleshooting. It is formatted as a combination of instruction and carefully structured, hands-on exercises aimed at developing job-related knowledge and skills.

SIEMENS

Drives & Motion

SINAMICS /SIMOTION / SIMATIC Motion Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)

Siemens Mechatronic Systems Certification Program (SMSCP)

quickSTEP Courses

Online Self-Paced Learning

SITRAIN Access

Formal Learning (Deep Dive)

SINAMICS S120 - Parameterizing and Commissioning with STARTER

SIMOTION and SINAMICS S120 - Diagnostics and Service

SIMOTION System Programming

Performance Assist Tools

How-to Video Library

Simulation Systems

Virtual Mentoring

Drives & Motion: SINAMICS /SIMOTION / SIMATIC Motion

SINAMICS S120 - Parameterizing and Commissioning with STARTER

Course code: DR-S12-PM

Target groups: Maintenance ; Engineer

Description: This course is intended to provide knowledge and skills related to the SINAMICS S drive as it pertains to commissioning, operation, configuration, maintenance, diagnostics, and troubleshooting. It is formatted as a combination of instruction and carefully structured, hands-on exercises aimed at developing job-related knowledge and skills.

SIMOTION and SINAMICS S120 - Diagnostics and Service

Course code: MC-SMO-DG

Target groups: Programmer ; Commissioning ; Maintenance

Description: This course is intended to provide knowledge and skills related to SIMOTION systems as it pertains to commissioning, operation, configuration, maintenance, diagnostics, and troubleshooting. It is formatted as a combination of instruction and carefully structured, hands-on exercises. This course will utilize the D425-2 DP/PN motion control module and the SINAMICS servo drive controller for all exercises. The skills acquired will be portable to SIMOTION C-based and P-based controllers.

SIMOTION System Programming

Course code: US-DVSMOP1A

Target groups: Programmer ; Engineer ; Commissioning ; Maintenance

Description: This course is for SIMOTION system developers and users who are responsible for creating, commissioning, or maintaining SIMOTION based motion control systems. This course enables the participant to structure, generate and put in operation complex SIMOTION control program using MCC-charts and Structured Text. Examples of different applications user programs will be generated, and ways of structuring programs will be shown. The focus lies on programming with Structured Text, Ladder and MCC.

SIEMENS

SIMOCODE Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)

Siemens Mechatronic Systems Certification Program (SMSCP)

quickSTEP Courses

Online Self-Paced Learning

SITRAIN Access

Formal Learning (Deep Dive)

SIMOCODE Pro

Performance Assist Tools

How-to Video Library

Simulation Systems

Virtual Mentoring

SIMOCODE

SIMOCODE Pro

Course code: SD-SIMOPRO

Target groups: Maintenance ; Operator

Description: This course introduces the SIMOCODE Pro Motor Management System and its components. Using representative hardware, the student will configure and operate the system. Unit controls allow the student to experience the reaction of the SIMOCODE Pro to overcurrent, undervoltage or over temperature. SIMOCODE ES software is used to configure the system for operation of a reversing motor and modification of the controls to adapt to user's requirements.

SIEMENS

Process Automation

PCS7 Technician / Maintenance & Operator Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)

Siemens Mechatronic Systems Certification Program (SMSCP)

quickSTEP Courses

Online Self-Paced Learning

SITRAIN Access

Formal Learning (Deep Dive)

PCS7 System Service 1

PCS7 System Service 2

Siemens SIMATIC PCS 7 Basic Engineer

PCS7 System Operator

Performance Assist Tools

How-to Video Library

Simulation Systems

Virtual Mentoring

Advanced Learning

SIMATIC PCS 7 Process Safety

SIMIT in Process Automation

Process Automation: PCS7 Technician / Maintenance & Operator

PCS7 System Service 1

Course code: US-PCSVCS1B

Target groups: Maintenance ; Engineer ; Operator

Description: This course is designed for individuals receiving an engineered PCS7 system and responsible for system sustaining and service. The goals of this course are to help the student learn to efficiently use, optimize, and troubleshoot their process through the PCS7 system. This course begins with the students learning the key system architecture and operational functions. The course then builds a solid foundation of system fault analysis of software configuration, important basic project settings including physical components, software configuration, basic module parameterization, and system networks. Students will then learn how to analyze errors/faults using the system tools and determine the cause and corrective action of these errors/faults. This hands-on course builds experience with system use, optimization, common troubleshooting, and basic service engineering tasks.

PCS7 System Service 2

Course code: US-PCSVCS2B

Target groups: Engineer ; Maintenance ; Operator

Description: Plant Engineers, Technicians and Users responsible for operating, optimizing and troubleshooting a PCS7 system should attend this course. This course is designed for individuals receiving an engineered PCS7 system and are responsible for system sustaining, service and basic modification. The goals of this course are to help the student learn to efficiently use, optimize and troubleshoot their process as well as replacements and additions to it. This course begins with the students learning the key system architecture and operational functions. The course then builds a solid foundation of system fault analysis of software configuration, important basic project settings including physical components, software configuration, basic module parameterization and system networks. Students will then learn how to analyze errors/faults and repair/replace faulty components. Students will also learn how to perform basic expansions and modifications to their system. This hands-on course builds experience with system use, optimization, common troubleshooting and basic service engineering tasks.

Siemens SIMATIC PCS 7 Basic Engineer

Course code: CP-PCS7-1

Target groups: Engineer

Description: This is a multiple-choice written performance exam designed to assess the basic skills of a PCS7 Engineer. This is a skills-based certification test covering topics taught during PCS7 Engineering 2.

PCS7 System Operator

Course code: US-PCPCSU1C

Target groups: Operator

Description: This course provides the student with a working exposure to the PCS7 OS control system. This is a flexible agenda with a 1 day core agenda plus a ``Day 2 option`` with advanced system diagnostics. Using a pre built Siemens demo project, the students will learn PCS7 system operational functions and procedures in a safe and controlled environment. All core operational tasks and system tools are discussed and practiced by the students. Typical operator system inputs, acknowledgments, control and monitoring tasks are included. The Day 2 option is targeted for those operators with additional system diagnostics responsibilities. This section includes basic hardware, networking and system troubleshooting. This course is a hands-on curriculum working with a typical simulated production process.

Process Automation: PCS7 Technician / Maintenance & Operator

SIMATIC PCS 7 Process Safety

Course code: ST-PCS7SAF

Target groups: Maintenance ; Engineer ; Operator

Description: This course builds skills for sustaining and operating a Siemens PCS7 Process Safety System. The course begins with an introduction to process safety system concepts, with insight on typical process control architectures. The course then builds skills in hardware components, basic SIMATIC project management, and system troubleshooting. Attendees will review system program elements and tools to learn support systems level troubleshooting. The Safety Matrix, a tool available for safety cause and effect configuration, is also covered. The class will use a functioning safety demo project with minimal system programming.

SIMIT in Process Automation

Course code: ST-PCS7SIM

Target groups: Programmer ; Sales

Description: This course provides you a summary of the functions and libraries of the simulation software SIMIT. By practical exercises you will learn about the design of simulations / simulation models for testing the PCS 7 automation software.
The perfect interplay of all components integrated in SIMIT enables you to produce more in the highest quality durably and to establish new products on the market considerably faster.

SIEMENS

Process Automation

PCS7 Engineering Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)

Siemens Mechatronic Systems Certification Program (SMSCP)

quickSTEP Courses

Online Self-Paced Learning

SITRAIN Access

Formal Learning (Deep Dive)

PCS7 System Engineering 1

PCS7 System Engineering 2

SIMIT in Process Automation

Performance Assist Tools

How-to Video Library

Simulation Systems

Virtual Mentoring

Advanced Learning

Siemens SIMATIC PCS 7 Basic Engineer

SIMATIC PCS 7 AS-Engineering

SIMATIC PCS 7, SIMATIC BATCH

SIMATIC TDC Engineering with D7 and CFC

SIMATIC PCS 7 OS-Engineering

Siemens Certified SIMATIC PCS 7 Engineer

Process Automation: PCS7 Engineering

PCS7 System Engineering 1

Course code: US-PCSYSE1D

Target groups: Engineer

Description: This course is designed for controls engineers who are responsible for project design, development, and commissioning a PCS7 system. The goals of this course are to aggressively help the student learn a basic system configuration and project design using standard system tools and libraries. This course begins with the definition of a typical project and planning the system architecture. The students will then actively build, test, and debug a simple PCS7 process system, exploring the Automation Station, Engineering Station, and Operator Station engineering environments. Hands-on lab exercises are used to build experience with system engineering, process optimization, and common troubleshooting.

PCS7 System Engineering 2

Course code: US-PCSYSE2D

Target groups: Engineer

Description: This is an advanced process control course for engineers. The goals of this course are to aggressively help the student learn advanced level system configuration and project engineering. This course begins with the project configured in the System Engineering-1 course and elevates the functionality through advanced Engineering Station programming, Operator Station graphics development, and Automation Station hardware integration. Students will use “best practice” project design and management techniques to configure a typical process application. Bulk engineering tools and advanced editing skills are introduced. Custom graphics and library blocks using Structured Control Language (SCL) will be introduced, providing skills to customize a system to meet customer-specific requirements. Advanced level system administrative tasks will be explored, providing an opportunity for a comprehensive experience in engineering, troubleshooting, and system integration.

SIMIT in Process Automation

Course code: ST-PCS7SIM

Target groups: Programmer ; Sales

Description: This course provides you a summary of the functions and libraries of the simulation software SIMIT. By practical exercises you will learn about the design of simulations / simulation models for testing the PCS 7 automation software.
The perfect interplay of all components integrated in SIMIT enables you to produce more in the highest quality durably and to establish new products on the market considerably faster.

Siemens SIMATIC PCS 7 Basic Engineer

Course code: CP-PCS7-1

Target groups: Engineer

Description: This is a multiple-choice written performance exam designed to assess the basic skills of a PCS7 Engineer. This is a skills-based certification test covering topics taught during PCS7 Engineering 2.

Process Automation: PCS7 Engineering

SIMATIC PCS 7 AS-Engineering

Course code: ST-PCS7ASE

Target groups: Programmer ; Other

Description: This is an advanced AS engineering course designed for experienced PCS 7 users, engineers and Solution Partners. The goals of this course are to enhance the student's skill-set by exploring advanced AS configuration topics and solutions to common application problems. This course begins with the programming/specifying of the hardware components based on memory and cycle time requirements. Project handling will include archiving, Multi project / multi-user engineering, project comparison, access protection and license management. AS hardware configuration topics will include important settings, Profinet / field device integration, high precision time stamping and redundant automation systems. APL v8 innovations and CPU overload reactions will also be discuss as efficient engineering topics. Bulk engineering with Advanced ES will be presented with a highlight on Control module types vs. Process tag types as well as the importing of control modules/process tags using excel. Some advanced SFC and advanced alarm engineering/management topics will be reviewed including Advanced Process Control (APC) options.

SIMATIC PCS 7, SIMATIC BATCH

Course code: ST-PCS7BAT

Target groups: Commissioning ; Engineer ; Programmer

Description: This course is an introduction to Siemens SIMATIC Batch processing. Using the same project created during the prerequisite PCS 7 System Engineering training courses, students will review a typical batch process model to understand process elements and terminology. Students will then use the same sample batch process to learn batch tools, management and control skills. Security, system administration and batch control techniques topics are included. Recipe generation and planning considerations are also discussed.

SIMATIC TDC Engineering with D7 and CFC

Course code: US-PCTDCP2A

Target groups: Maintenance ; Programmer ; Commissioning ; Engineer

Description: This course is designed for service technicians and commissioning/configuration engineers who are responsible for project maintenance, design, development, and commissioning a TDC system using CFCs. This course provides you with the knowledge for programming and commissioning the control system SIMATIC TDC. After the training, you will be able to configure technological functions with CFC and establish the communication via PROFIBUS, Industrial Ethernet, and GDM-connection.
Theoretical knowledge will be reinforced with numerous practical exercises using a TIA plant model. This consists of a SIMATIC Technology TDC System, PROFIBUS DP bus and a mix of peripheral devices such as ET200M, MICROMASTER, SINAMICS S120 compact and other test equipment.

SIMATIC PCS 7 OS-Engineering

Course code: ST-PCS7OSE

Target groups: Other ; Maintenance ; Programmer ; Operator

Description: This is an advanced OS engineering course designed for experienced PCS 7 users, engineers and Solution Partners. The goals of this course are to enhance the student's skill-set by exploring advanced OS configuration topics and solutions to common application problems. This course begins with an existing AS project and a brief but thorough introduction to it. Using this "base" project and advanced programming techniques, various OS architectures will be added. OS graphic development will include "best practice" methods as well as advanced topics such as C-script, VB script, Faceplate functionality and custom solutions. Students will use recommended project design and management techniques to build a typical OS solution. In addition students will employ advanced Multi-project and Multi-engineering techniques. Advanced OS architectures such as OS redundancy, Web Server/Client and PH will be examined in a clear concise manor. Advanced AS integration will also be addressed throughout this course to provide solutions to common interface challenges. Archive strategy, configuration and implementation will be thoroughly explored. Various diagnostic aids and troubleshooting methods will be employed throughout the presentation of this course.

Process Automation: PCS7 Engineering

Siemens Certified SIMATIC PCS 7 Engineer

Course code: CP-PCS7-2

Target groups: Engineer

Description: This is a comprehensive performance exam designed to assess the skills of a Certified PCS7 Engineer. The examinee will be required to create and configure a proper PCS 7 Multiproject based on a set of instructions and requirements. This is a practical, skills-based certification test covering topics taught during PCS7 Engineering 1, Engineering 2, OS Advanced and AS Advanced courses.

SIEMENS

Electrical Maintenance & Safety Learning Map

Workforce Development

Siemens Cooperates with Education (SCE)
Siemens Mechatronic Systems Certification Program (SMSCP)
quickSTEP Courses
Online Self-Paced Learning
SITRAIN Access

Formal Learning (Deep Dive)

840Dsl Safety Integrated for OEMs
840Dsl Safety Integrated Maintenance
S7-300F Distributed Safety Engineering
S7-300F Distributed Safety Sustaining
TIA Portal Safety Engineering
TIA Portal Safety Sustaining

Performance Assist Tools

How-to Video Library
Simulation Systems
Virtual Mentoring

Advanced Learning

TUV SUD Functional Safety Certification

Electrical Maintenance & Safety

840Dsl Safety Integrated Maintenance

Course code: US-SNSLSM1A

Target groups: Maintenance ; Engineer

Description: This advanced course is designed for controls engineers and service specialists who use the SINUMERIK 840Dsl and Safety Integrated (SI) functions in machine tool applications. This course provides the knowledge and skills that controls engineers and/or maintenance technicians require for familiarization and the operation of an automated machine tool, equipped with a SINUMERIK 840Dsl CNC which uses the optional Safety Integrated System. The goal of the class is to teach the students to identify the several types of applications associated with the Safety Integrated System, to achieve a working knowledge of the concepts, and to identify and diagnose Safety Integrated related problems. The course format is a combination of instruction and hands-on exercises. The hands-on exercises provide exposure to a SINUMERIK 840Dsl CNC, its system components, connections, start up, and operation. Students will perform practical exercises related to service and troubleshooting of the system, with emphasis on the Safety Integrated aspects of the 840D.
The course format is a combination of instruction and hands-on exercises. The hands-on exercises provide exposure to a SINUMERIK 840Dsl CNC, its system components, connections, start up, and operation. Students will perform practical exercises related to service and troubleshooting of the system, with emphasis on the Safety Integrated aspects of the 840D.

S7-300F Distributed Safety Engineering

Course code: US-S7SFTE1A

Target groups: Programmer ; Engineer

Description: This course is for engineers and personnel responsible for implementing SIMATIC Distributed Safety systems, including: • Selecting the appropriate architecture • Selecting the components and understanding their specific purposes and limitations • Specifying the module and system wiring • Developing the safety PLC program • Starting up and supporting the system. This course introduces the student to a Siemens Distributed Safety PLC application. Participants receive knowledge on applying the system per relevant standards, Failsafe Hardware Module details and parameterization, Safety Program structure and implementation, Safety Communications, System Diagnostics and introduction to

S7-300F Distributed Safety Sustaining

Course code: US-S7SFTS1A

Target groups: Maintenance ; Engineer ; Programmer

Description: This course is for SIMATIC S7 300F PLC users who install or maintain automation safety systems and their application programs. This course introduces the student to a Siemens Distributed Safety PLC application. Participants will build skills on commissioning, troubleshooting and upgrading an automation safety system. Failsafe Hardware Module details and parameterization, Safety Program structure and implementation, and System Diagnostics are covered.

TIA Portal Safety Engineering

Course code: US-PTSFTE1A

Target groups: Maintenance ; Engineer

Description: This course introduces the student to a Siemens Distributed Safety PLC application. Participants receive knowledge on applying the system per relevant standards, Failsafe Hardware Module details and parameterization, Safety Program structure and implementation, Safety Communications, System Diagnostics and introduction to Drive Safety .The course format is a combination of instruction and hands-on exercises. A realistic model is used for demonstrations and student exercises. Exercises allow students to practice tasks such as configuration, programming, and code debugging.

Drive Safety.

Electrical Maintenance & Safety

TIA Portal Safety Sustaining

Course code: US-PTSFTP2A

Target groups: Maintenance

Description: This course introduces the student to a Siemens Distributed Safety PLC application. Participants build skills on commissioning, troubleshooting, and upgrading an automation safety system. Functional safety principles, sensor-actuator connections, and device configuration of the S7-1500F and ET 200SP are covered, as well as restoring the system and programming the safety blocks. The course format is a combination of instruction and hands-on exercises. A realistic model is used for demonstrations and student exercises. Exercises allow students to practice tasks such as testing, debugging, and using diagnostic tools.

TUV SUD Functional Safety Certification

Course code: US-TUVFSE1A

Target groups: Engineer ; Reliability

Description: This course is intended for application engineers and system integrators with some experience in Functional Safety, project and safety managers, and designers and safety specialists working in machinery applications. The objective of this course is to relate the safety concept of IEC 61508-3 and cover the main principles for Functional Safety. ISO 13849 and IEC 62062 are covered by demonstrating safety principles according to these standards and how they relate to IEC 61508-3. Software development of safety related control systems is covered in day three followed by a fourth day question and answer session with resulting final exam.

Industrial Networking and Identification

	Siemens Initial Training for Industrial Networks (Siemens ITIN)		Siemens Certified Professional for Industrial Networks (Siemens CPIN)	Siemens Certified Expert for Industrial Networks (Siemens CEIN)
Wired Networks	Web-based Training: Basics of Industrial Networks (optional)	Ethernet Fundamentals in Industrial Networks (optional)	Switching and Routing in Industrial Networks with SCALANCE Switching and Routing in Industrial Networks with RUGGEDCOM	Diagnostics and Optimization of Industrial Networks with SCALANCE Advanced Switching and Routing in Industrial Networks with RUGGEDCOM
Wireless Networks			Wireless LAN in Industrial Networks WiMAX in Industrial Networks	Diagnostics and Optimization of Industrial Wireless LAN
Security			Security in Industrial Networks with SCALANCE Security in Industrial Networks with RUGGEDCOM	
Network Management			Network Monitoring and Configuration SINEC NMS with SCALANCE Network Monitoring and Configuration SINEC NMS with RUGGEDCOM	

Industrial Networking and Identification

Ethernet Fundamentals in Industrial Networks

Course code: IC-ETHFUN

Target groups: Commissioning ; Engineer ; Sales ; Maintenance ; Operator ; Programmer ; Reliability ; Other

Description: The Industrial Ethernet Fundamentals course provides a broad overview in network technology and mechanisms which are the foundation of today's digital communication. Ever heard of the OSI reference model? This course will give you the insight and takes you on a tour through all seven layers.

Switching & Routing in Industrial Networks with SCALANCE

Course code: IC-SWIROS

Target groups: Engineer ; Commissioning ; Maintenance ; Operator ; Programmer ; Reliability ; Sales ; Other

Description: An industrial or industry-related environment without Ethernet is no longer conceivable. A high degree of reliability and sufficient capacities are demanded from hard-wired industrial networks. At the same time, a secure connection of these Ethernet networks to an existing network structure as well as the seamless integration into a corporate network is highly required. In the Switching part of the course you will learn Switched Network solutions and how they connect to real-time-capable systems in theory and in practice. The Routing section will teach you the fundamentals and knowledge required for planning, configuring, and operating network solutions in industrial environments, which are structured by routing, and their connection to company networks. You will become familiar with the special requirements of routing solutions in industry and the required fundamentals of IP communication, static routing, routing protocols, and redundancy mechanisms. The course includes ample time for practical exercises, diagnostics, and troubleshooting.

Switching & Routing in Industrial Networks with RUGGEDCOM

Course code: RC-SWIROR

Target groups: Engineer ; Commissioning ; Maintenance ; Operator ; Programmer ; Reliability ; Sales ; Other

Description: Ethernet has found its way into the industrial environment. A high degree of reliability and throughput rates are demanded from industrial networks. At the same time a reliable integration into a corporate network is highly required. In this course, participants will gain the theoretical and practical knowledge required for real world implementation of Industrial Networks and the methods applied to operate and maintain such networks. You will also gain theoretical and practical knowledge of what IP communications, routing protocols, redundancy, LAN/WAN concepts that helps facilitate communications between multiple network locations. In addition, participants will apply these concepts on RUGGEDCOM devices. The course includes ample time for practical exercises, diagnostics, and troubleshooting.

Wireless LAN in Industrial Networks

Course code: IC-IWLANP

Target groups: Commissioning ; Engineer ; Operator ; Maintenance ; Programmer ; Reliability ; Sales ; Other

Description: In industrial environments, WLAN is exposed to more extreme conditions, such as temperature fluctuations, humidity, dust, etc. In addition, a high-degree of reliability and performance is expected from these systems. At the same time, these industrial WLAN networks (IWLAN for short) provide a great deal of flexibility for companies in the implementation of complex applications indoors and outdoors. Thus, with Safety Integrated, applications can also be wirelessly implemented and seamlessly connected to Industrial Ethernet with PROFINET components. The course teaches the configuration, planning, and operation of IWLAN, also in interaction with real-time-capable systems. To ensure that the theoretical knowledge can later be implemented, we value in-depth practical exercises during the training. You can deepen your theoretical knowledge with numerous practical exercises on products from the SCALANCE W product line.

Industrial Networking and Identification

Security in Industrial Networks with SCALANCE

Course code: IC-SECINP

Target groups: Engineer ; Commissioning ; Operator ; Other ; Maintenance ; Programmer ; Reliability ; Sales

Description: It is difficult to imagine day-to-day industrial operations without Ethernet connections. From large-scale production systems to the smallest Industrial Ethernet communication networks, nearly everything has come to depend on their reliability and security. The opportunities on the one hand are countered by risks on the other hand. Access by outsiders or manipulation in the network always has catastrophic consequences for production or in-house expertise. Therefore, functioning security systems are an absolute must. In this course you will learn the potential dangers and risks in industrial networks and how to assess them. You will be shown numerous ways to improve the protection of know-how and process sequences from attacks, espionage, and manipulations. During the course you will become familiar with knowledge necessary to apply concepts mandated by common security standards. Because the course does not just cover theoretical security concepts, there is also ample opportunity to implement them in practical exercises.

Security in Industrial Networks with RUGGEDCOM

Course code: RC-SECINP

Target groups: Engineer ; Commissioning ; Maintenance ; Operator ; Programmer ; Reliability ; Sales ; Other

Description: It is difficult to imagine day-to-day industrial operations without Ethernet connections. From large-scale environment to the smallest Industrial Ethernet communication network, nearly everything has come to dependency on the overall systems reliability and security. The opportunities on the one hand are countered by risks on the other hand. Access by outsiders or manipulations in the network always has catastrophic consequences on application or on in-house expertise. Therefore, functioning security systems are an absolute must. During the course you will become familiar with the knowledge necessary to apply concepts mandated by common security standards. The course does not just cover theoretical security concepts, it also provides the opportunity to implement these concepts through practical hands-on exercises.

Network Monitoring & Configuration SINEC NMS with SCALANCE

Course code: IC-SNCNMSP

Target groups: Engineer ; Commissioning ; Maintenance ; Operator ; Programmer ; Reliability ; Sales ; Other

Description: The complexity and number of participants in Ethernet-based production networks are constantly increasing due to growing requirements. Failure of single devices in such networks may result in loss of production and, at the worst, cause a downtime of the whole production chain. To minimize unproductive times and the resulting costs, transparency and a continuous monitoring of the network is crucial. Additionally, manual setup and managing of device and firewall-/NAT configurations as well as firmware updates can be inefficient and error prone. SINEC NMS is a central solution for monitoring a wide range of different devices in a network as well as for configuration and management of the SCALANCE and RUGGEDCOM network portfolio.

Network Monitoring & Configuration SINEC NMS with RUGGEDCOM

Course code: RC-SNCNMSP

Target groups: Engineer ; Operator ; Commissioning ; Maintenance ; Programmer ; Reliability ; Sales ; Other

Description: The complexity and number of devices in Ethernet-based industrial networks are constantly increasing due to growing requirements. Failure of devices in such networks may result in downtime and the disruption of critical services. To minimize downtime and its associated costs, transparency and a continuous monitoring of the network is crucial. Additionally, manual setup and management of device and firewall-/NAT configurations as well as firmware updates can be inefficient and error prone. SINEC NMS is a central solution for monitoring a wide range of different devices in a network as well as for configuration and management of the RUGGEDCOM network portfolio.

Industrial Networking and Identification

Diagnostics and Optimization of Industrial Networks with SCALANCE

Course code: IC-DIOPINE

Target groups: Engineer ; Operator ; Programmer ; Reliability ; Maintenance ; Commissioning ; Other ; Sales

Description: A reliable, robust network is the backbone of any modern industrial enterprise. Since the network requirements can change over the life cycle of a plant, or other application, the diagnostics and optimization of the network are extremely important tasks. Even during planning stages, various aspects regarding the functionality and diagnostic capability have to be taken into account. For instance, clear network documentation, knowledge of enhanced functionalities of modern switches and routers, as well as up-to-date tools for the operation of networks are imperative for diagnostics and optimization. Using practical examples, participants of this course will learn how to diagnose typical error causes in industrial networks, and determine how to prevent them or minimize their impact with the aid of enhanced device functions. You will be trained to secure administrative access to the components, and to restrict access to the network itself. You can deepen your theoretical knowledge with numerous practical exercises on products from the SCALANCE product line.

Advanced Switching and Routing in Industrial Networks with RUGGEDCOM

Course code: RC-ASWIROR

Target groups: Engineer ; Operator ; Reliability ; Maintenance ; Programmer ; Sales ; Commissioning ; Other

Description: Reliable, performant and robust Industrial Ethernet infrastructures are the backbone of a modern industrial application. At the same time, it is required to connect different locations. The data communication for this is characterized by high availability under harsh conditions. Industrial Ethernet networks are up to these challenges.
With the training course “Advanced Switching and Routing in Industrial Networks with RUGGEDCOM” of the Industrial Networks Education – Certification Program, you will acquire the knowledge required to plan, implement, operate and maintain such networks.

Diagnostics and Optimization of Industrial Wireless LAN

Course code: IC-DIOPWNE

Target groups: Commissioning ; Engineer ; Operator ; Maintenance ; Programmer ; Reliability ; Sales ; Other

Description: The functionality and reliability of WLAN networks are always dependent on the structural environment as well as other sources of interference such as neighboring wireless applications. Due to these locally individualized and ever-changing environmental parameters, WLAN solutions - unlike wired networks - are not 100% predictable. There is always the possibility that adaptations must be made during the commissioning and operation of wireless networks. Especially in mission-critical and industrial applications, where availability and reliability of a network play central roles, it is crucial to understand that industrial WLANs can only be diagnosed and optimized through a holistic approach. In this course, participants will learn about the techniques and methods for diagnosing industrial wireless networks, as well as eliminating interference and error sources. Practical exercises as well as corresponding checklists complete the course.



SITRAIN

You can bridge America's skills gap

SITRAIN Digital Industries Learning provides a comprehensive portfolio of learning options delivered in a variety of platforms:

- Instructor-led learning
- Online learning
- On-the-job learning
- Virtual mentoring

Gain expertise where it is needed most from the global leader in automation by reviewing flexible learning solutions from Siemens.
sitrain.us

SIEMENS

Legal Manufacturer

Siemens Industry, Inc.
100 Technology Drive
Alpharetta, GA 30005
United States of America

Telephone: +1 (770) 625-5644
usa.siemens.com/sitrain

Order No. CSTL-CATLG-0317

This document contains a general description of available technical options only, and its effectiveness will be subject to specific variables including field conditions and project parameters. Siemens does not make representations, warranties, or assurances as to the accuracy or completeness of the content contained herein. Siemens reserves the right to modify the technology and product specifications in its sole discretion without advance notice.

© 2026 by Siemens Industry, Inc.