SIEMENS

SCE Advanced Automation Fundamentals Certification Test: PLC

Audience

The goal of the SCE Advanced Automation Fundamentals Training and Certification is to provide a structured, repeatable method for both training and verifying the ability of an instructor or student to properly implement a Totally Integrated Automation solution while utilizing good engineering and recommended SIMATIC best practices.

Candidates should have already completed the SCE Automation Fundamentals Certification Test: PLC. The candidate can then review prep materials available from www.siemens.com/sce "Downloads" (i.e. https://www.automation.siemens.com/sce-static/learning-training-documents/tia-portal/learn-training-textbook-s7-1200-en.pdf). Experiential training and past training will also satisfy the pre-requisites of the exam as well as the Instructor Course: Workshop for Educators S7-1200 Advanced https://sitrain-lms.com/CourseView.aspx?cps=1186&view=course&CourseCode=SCT-WSSCEW2A (available for educators only, not students).

Prerequisites

- SCE Automation Fundamentals Certification Test: PLC

- Close any knowledge gaps, either through recommended training or via self-study.

- Review preparation materials, which include the certification companion and workshop exercises.

Profile

The SCE (Siemens Cooperates with Education) Program is an overall program designed to educate and equip schools with hardware and software of automation technology. This program provides schools with a recommended training program and materials to ensure that their technical instructors have the necessary level of knowledge to effectively demonstrate the fundamental competencies of an automation professional.

The goal of the SCE Certificates and badges are to provide a structured, repeatable method for verifying the ability of an instructor or student to properly implement a Totally Integrated Automation solution while utilizing good engineering and recommended SIMATIC best practices.

Certification candidates are first given the materials to build both their automation knowledge and their knowledge of SIMATIC solutions. The candidate is eligible to participate in the certification testing after meeting the training and knowledge requirements. Experiential training and past training will also satisfy the pre-requisites of the certification exam.

Certification Remediation

A candidate who does not pass the examination should refer to provided class schedules and self-study documentation prior to attempting the test again. A score of 70% must be achieved to pass the certification exam, which can be taken 3 times in 1 year before the exam expires.

Training Offerings

A candidate can take advantage of many different training offerings available from Siemens, ranging from self-study publications to instructor-led and online classes. The actual training a candidate will require will be based on prior training, prior experience, and the results of the assessment test. The SCE web site will include a Certification section (usa.siemens.com/sce) that provides course and self-study recommendations to benefit the candidate in exam preparation.

Topics

Upon completion of pre-requisite materials, a candidate should be able to:

- Support creation of a PLC application program using Ladder Logic (LAD) following the SIMATIC recommended best practices.

- Troubleshoot errors associated with the automation system.

- Troubleshoot functional errors in the application program or equipment under control.

- Understand network communications in an industrial environment.

- Recognize key features and advantages of the Digital Twin and IOT concepts.

Test Topics

- Ability to commission a PLC application program that meets the operational criteria of the customer using the programming languages of Ladder Logic (LAD) and Function Block Diagram (FBD) following the SIMATIC recommended best practices.

- Understand analog value processing in TIA Portal along with basic conversions and data types.

- Understand advanced differences in block types and recognize basics of SCL programming.

- Ability to troubleshoot more advanced errors within the TIA system including the PLC, HMI and distributed IO.

- Recognize Digital Twin, Virtual Commissioning, and IOT concepts and what advantages they provide to industry.