SIEMENS

Education/Academic Support

Siemens Mechatronic Systems Instructor Certification: Level 2

General Information

Course Code: STA-SMSCP2A
Length: 10 Days

Audience

This course is exclusively for educators interested in developing teaching skills on Siemens automation technologies. Teaching staff from public, not for profit schools including Technical High Schools, Community Colleges, Technical Schools, Universities and Trade Schools are welcome to apply and register.

Prerequisites

- Completion of Systems Approach Paradigm Week (SAPW) Instructor Certification course
- Completion of Level 1 Instructor Certification course is strongly recommended
- Teaching or industry background in Mechatronics or Electrical or Mechanical Engineering
- Basic knowledge of Siemens PLCs and their programming Engineering

Profile

6.6 CEUs (Continuing Education Credits)

This course covers the application of Systems Approach to the content topics of the six Level 2 courses: Process Control Technologies; Introduction to Totally Integrated Automation; Automation Systems; Motor Control; Mechanics and Machine Elements; Manufacturing Processes. In In this course you will work with TIA portal, PROFINET and PROFIBUS, the SIMATIC S7 product family, and LabView.

Objectives

After successfully completing this course, participants will be certified as a Siemens Mechatronic Systems Certified Instructor for Level 2.

Level 2 focuses on the in-depth technical competencies and troubleshooting skills needed for teaching technician-focused programs. Level 2 also includes the development of troubleshooting and industry-oriented problem-solving lessons that can be integrated into a classroom setting.

Topics

1. System Approach paradigm and course-specific didactic training in Process Control Technologies;
2. Introduction to Totally Integrated Automation; Automation Systems; Motor Control; Mechanics and Machine Elements; Manufacturing Processes
3. Overview of job profile for Level 2 (Associate, Technician)
4. Review of Systems Approach
5. Review course syllabi
6. Hands-on exercises with mechatronic systems, modules, and sub-systems
7. Commissioning in Industries / Software commissioning
8. Networking
9. Structured programming on mechatronic systems
10. Sequential programming
11. Introduction to process management and Lean
12. Factory simulation, Ball Point Pen Factory
13. Role of factory tours in study programs
14. Control structures of drive trains in mechatronic systems
15. Closed Loop/ Process Control in mechatronic systems
16. Utilization of simulated desktop systems in a classroom setting
17. Overview of Computer aided design (CAD), Computer aided manufacturing (CAM), and Computer numerical control (CNC) concepts
18. Machine elements in mechatronic systems, such as gearboxes
19. Microcontrollers in mechatronic systems
20. Hardware fault implementation and troubleshooting
21. Sample question review for Siemens student examination
22. Troubleshooting strategies for systems
23. Creation of sample lessons utilizing the Systems Approach
24. Review additional Level 2 requirements for mechatronic systems
25. Development of strategies for knowledge transfer from one system to another
26. Implementation workshop for implementation of SMSCP locally