SIEMENS
Ingenuity for life

Making tomorrow's workforce fit for the future of industry

Siemens Mechatronic Systems Certification Program (SMSCP)

siemens.com/sitrain-smscp

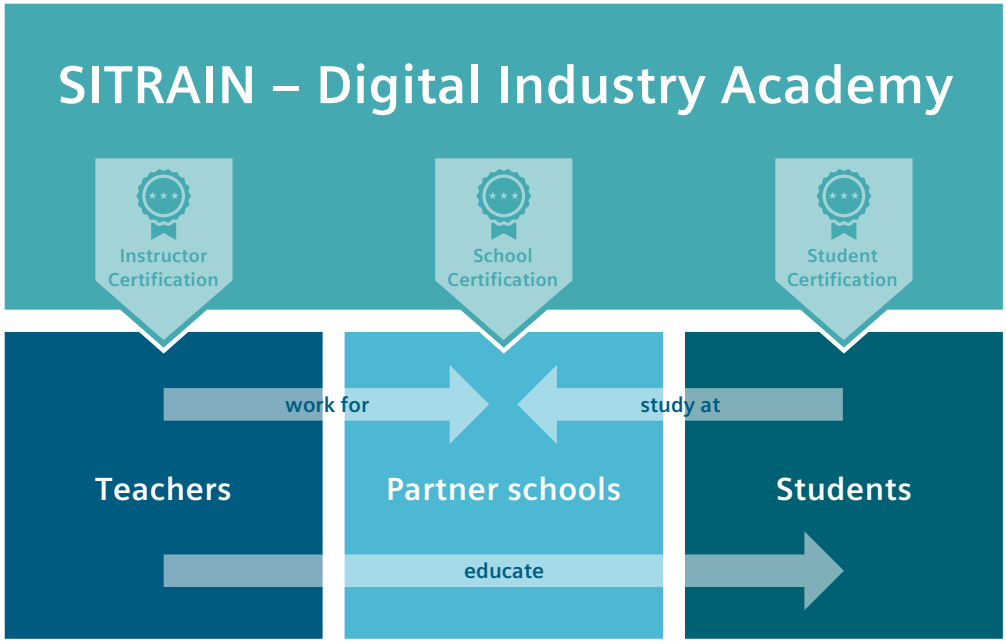
German dual education system meets Siemens' in-house know-how

Students with an SMSCP certification learn how to work their way into a new system, and by means of the troubleshooting strategies which they learn, they are able to transfer their knowledge and expertise easily to another system. The end result is an employee who is flexible, autonomous, and professional in his or her dealings with such complex systems.

Students are only awarded certifications for Siemens Certified Mechatronic Systems Assistant, Associate, or Professional after successfully passing the related examination. Student examinations are administered only by SMSCP partner schools. Each certification is based on a specified, industry-driven job profile which helps an employer determine where this person can be best placed within their organization.

Making operators, technicians, and engineers fit for industry – holistic learning for tomorrow's workforce.

SMSCP increases employability and decreases onboarding time



SMSCP benefits

For partner schools

Partner schools can rely on Siemens' 130 years of experience in educating machine operators, technicians, and engineers. This expertise is combined with new teaching methods based on the German dual system.

- Worldwide standards for the training and the certification set by Siemens
- Holistic approach of teaching mechatronics to meet skills requirements from industry
- SMSCP includes topics of the future such as the digital enterprise

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 meets industry skill requirements
- SMSCP is a recognized, international industrial certification
- Obtain an industry certification, in addition to a certificate or a degree
- Integration in the current studies, low cost

For employers

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.

- Worldwide standards for the training and the certification set by Siemens
- Holistic approach of teaching mechatronics to increase efficiency and productivity among machine operators, technicians, and engineers
- Vendor-neutral broad-based training

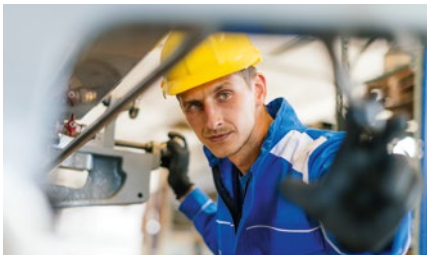
SMSCP 4.0 Course 1: Digital twins and smart production

New Industrie 4.0 series

- Introduction to digitalization and Industrie 4.0
- Planning and implementation of a virtual commissioning
- Verifying changes/optimizations of mechatronic systems with manufacturing execution systems (MES)
- Production tracking and control with RFID

Certification – three levels built from job profiles

1 Certified Mechatronic Systems Assistant (Intelligent machine operator)



Competencies

- Educational content: electrical components, mechanical components and electrical drives (electro-) pneumatic and hydraulic control circuits, and digital fundamentals and PLCs
- Well-grounded machine operator in a complex system, responsible for efficient operation of the equipment with minimal downtimes
- System understanding, ability to view components or devices in terms of their roles within the system, identify correctly where malfunctions occur, and communicate with experts who can carry out the required repairs

2 Certified Mechatronic Systems Associate (High-level technician)

Competencies

- Educational content: process control technologies, introduction to Totally Integrated Automation (TIA), automation systems, motor control, mechanics and machine elements, and manufacturing processes
- Highly skilled technician working with complex systems; manage, investigate, repair, and troubleshoot mechatronic systems, with the aim of operational efficiency and cost and process control
- System understanding, with detailed knowledge of how components work together

3 Certified Mechatronic Systems Professional (Engineer)

Competencies

- Educational content: project management and technical systems project
- Skilled designer of and expert on complex mechatronic systems, applies selected project and system engineering practices, in a project with the goal to design or improve a mechatronic system upon customer and user needs
- System understanding, working with new systems, designing and optimizing them, and transferring knowledge and expertise easily to other systems and projects

Industrie 4.0 elements in courses

- Integration of Digital Enterprise equipment, i.e. digital demo machine
- Overview of Siemens Digital Enterprise use cases
- Sample lesson for CAD in NX
- Sample lesson for RFID
- Integration of digital twins for physical hardware
- Data analytics and key performance indicators (KPIs) with MindSphere
- Sample lesson for automated digital workflow

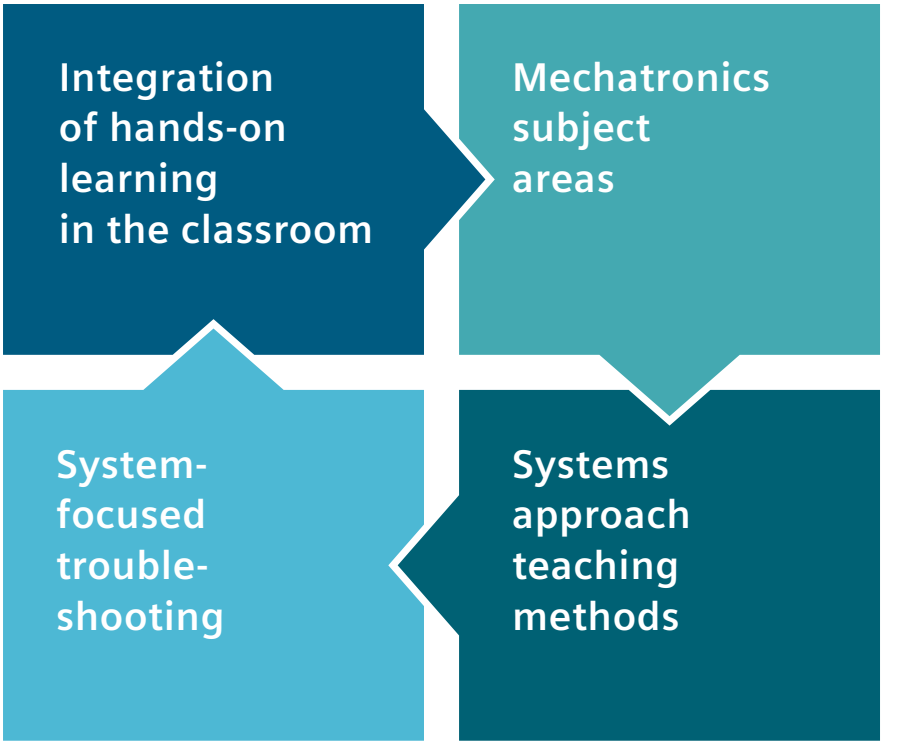
Our philosophy

Systems approach

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 designed 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. This allows them to easily transfer their knowledge to other systems, resulting in flexible and autonomous employees.

A focus on system understanding, troubleshooting, and problem-solving skills results in individuals who can adapt to new work situations quickly and appropriately



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