

Skill 48 Industry 4.0 at WorldSkills Lyon 2024

Mastering today's challenges in Industry 4.0

FESTO



Industry 4.0 is characterized by the integration of advanced technologies into manufacturing and other industries. Technical vocational education (TVET) plays a crucial role in preparing the workforce for the demands of the new industrial landscape.

Festo is a leading supplier of automation and process technology as well as technical education. We are highly motivated to find the best possible solutions for integrating digitalization into industrial manufacturing and to enhance the development of our products and services.

Festo became a Global Industry Partner of WorldSkills in 1991 and has been providing state-of-the-art learning systems for WorldSkills Competitions around the world ever since. The Cyber-Physical Lab Industry 4.0, developed by Festo Didactic, is a perfect training system to prepare your candidates for the official skill 'Industry 4.0' at the 47th WorldSkills Lyon 2024 championship.

Solution
Partner

Automation
Drives

SIEMENS


worldskills
Lyon2024

Festo and WorldSkills are partners since more than three decades

Trendsetting learning solutions of Festo have become a standard

Made in Germany ●●●●

Research and development of Festo automation technology and technical education solutions has its origin in Germany. Being a 100% family-owned company with its headquarters near Stuttgart, Germany, Festo maintains 61 subsidiaries and is represented in 178 countries around the world. This global market know-how enables Festo to react on trends and be the first one to present high-quality, state-of-the-art learning solutions for TVET. WorldSkills relies on the proven Festo quality and selected Festo as Global Industry Partner for good reasons 30 years ago.

„Festo has been cooperating with WorldSkills for already more than 30 years to develop the skills of young people. The WorldSkills competitions underline the importance of technical vocational education and training in times of skilled workers shortage.“



A player in industry and government

Festo proudly looks back on almost 100 years of successful business and has become a prestigious leader in automation technology and technical education. Due to its genius, Festo is active member of the Industry 4.0 Research Advisory Board of the Federal Government's Plattform Industry 4.0. In this strategic body, Festo contributes to researching ways to improve industrial manufacturing. Festo Didactic, the education division, pays particular attention to qualification solutions for networked and ecologically sustainable production.



Dr. Oliver Niese,
Member of the Management Board,
Festo Didactic SE



Learn more about the commitment of Festo



WorldSkills Kazan 2019

At the 2019 event, Industry 4.0 entered the competition for the first time as a so-called 'Future Skill', along with 56 other official skills. Festo Didactic, an early adopter of Industry 4.0 education and training, led the charge for Industry 4.0 inclusion in the 'Future Skills Zone'

WorldSkills Competition 2022 Special Edition

Three years later, 8 teams (AT, CH, DE, GB, HU, IN, JP, PL) competed at the Special Editions in Stuttgart, Germany. Industry 4.0 has become an official skill that addresses today's technological challenges in industrial manufacturing.



WorldSkills Lyon 2024

The skill Industry 4.0 has become an indispensable discipline in the recent years. Just as technology is rapidly evolving, Festo embraces digital innovations such as the digital twin or machine learning and reflects them in its training solutions. For the third time, the young participants will be demonstrating their professional excellence in this skill on state-of-the-art competition equipment of Festo Didactic.



Experience the exciting atmosphere of the WorldSkills Competition 2022 Special Edition

Technologies and features of Industry 4.0

Well prepared for the future with Festo Didactic learning solutions

Industry 4.0 - the future of manufacturing
The factory of the future is a network of cyber-physical systems with the aim of achieving a very high degree of resilience to changing market and customer requirements and the resulting turbulence in the production area. Furthermore, this goal is to be achieved under cost and efficiency aspects.

The learning system CP Lab with its various add-on modules offers the ideal platform to acquire and continuously develop the skills to build and operate such industry 4.0 factories. Thanks to its consistent modularization and standardization as well as the exclusive use of open standards, the teaching system can grow with the requirements and is also constantly equipped with the latest technologies by Festo Didactic.

In WorldSkills Competition 2022, the CP Lab has already been utilized successfully. The system has now been extended for the latest developments in artificial intelligence. In this way, upcoming WorldSkills participants can perfectly prepare themselves for all relevant technologies in Industry 4.0.



Discover the numerous system configurations of the CP Lab system



Factory Planning and Simulation
Realistic 3D simulations allow to learn and experiment with virtual factories and develop new or optimized systems



PLC and HMI Programming
The control concept is modular: Each station comprises a PLC and a touch panel. The communication is done via modern protocols such as Profinet and OPC UA



Identification with RFID
The carriers and PLCs are equipped with RFID technology. Thus the product takes over the control of the system in Industry 4.0



Smart Sensors and IO-Link
Smart sensors with IO-Link communication enable real-time signal monitoring, collecting and transmitting data to technicians and engineers



IT Security
Communication networks are the backbone of Industry 4.0 and secure communication is an indispensable component in the qualification of competent specialists in the field of I4.0



MES and Data Processing
The Manufacturing Execution System (MES) with service-oriented architecture (SOA), open interfaces and an open database controls production in real time and offers extensive but intuitive operating and evaluation options



Web Shop
The web shop with open interfaces extends the system to include eCommerce topics from web presence and customer management to monitoring and analysis of orders



Industrial IoT and Dashboards
The open interfaces enable a connection to the Industrial Internet of Things (IIoT) as well as the development and operation of dashboards



Energy Monitoring
The energy monitoring system offers the use and programming of dashboards and enables understanding, transparency and efficiency increases



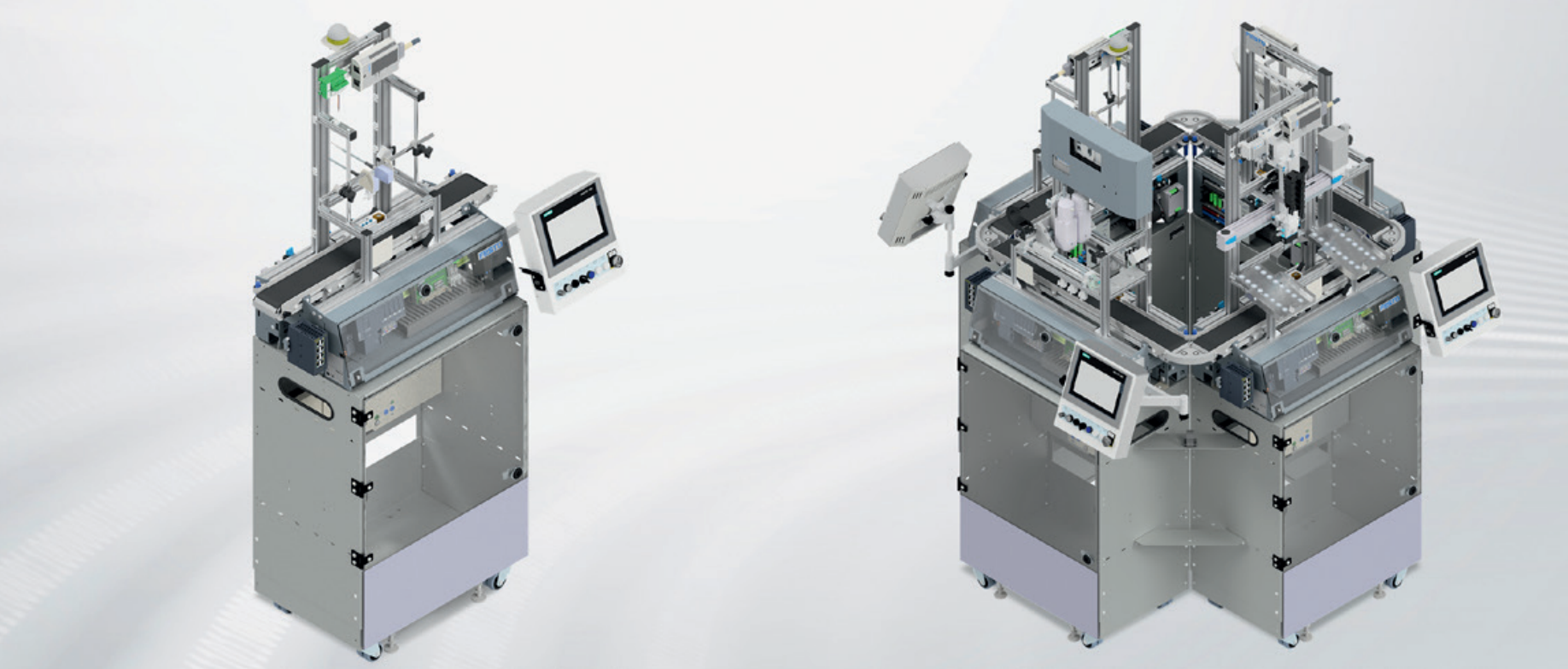
Machine Learning
Machine learning algorithms can be trained for the automated analysis of data for industrial applications such as the quality control.

The equipment of Festo Didactic is aligned with WorldSkills standards
Made for winners: The CP Lab Industry 4.0 single and system workplaces

With both the single and system workplace, Festo Didactic offers you a training system especially designed to prepare candidates for the challenges of the skill Industry 4.0. The technical equipment of the workplaces are naturally aligned and in accordance with WorldSkills regulations. The single workplace equipment will be the official competition material for the WorldSkills Lyon 2024 event. Both workplaces are fully assembled with the shown equipment. While the single workplace is ideal to train two learners, the system workplace enables students to simulate a factory environment and discover the connectivity of a real Industry 4.0 production.

Single workplace equipment:

- 1x CP Lab Carriage
- 1x CP Lab Conveyor DC-1512SP
- 1x CP Lab HMI Case
- 1x CP Lab Touch Panel TP700 Comfort
- 1x Tabletop Supply Unit
- 1 x CP Lab Application Module Measuring
- 1x Set of work pieces
- 1x NetLab Twin Package
- 1x Energy Measurement System
- 1x Energy Monitoring Package
- 1x Web shop for MES4
- 1x Equipment Set TP 1312 Smart Sensors
- 1x IoT Gateway
- 1x CIROS Software License
- 1x MES4 Licence for CP Lab
- 1x PC with TFT-monitor for MES
- 1x TIA Portal
- 1 x IIoT Kit



System workplace equipment:

- 4x CP Lab Carriage
- 4x CP Lab Conveyor DC-1512SP
- 4x CP Lab HMI Case
- 4x CP Lab Touch Panel TP700 Comfort
- 4x Tabletop Supply Unit
- 1x CP Lab Application Module iDrill
- 1x CP Lab Application Module Magazine
- 1x CP Lab Application Module Measuring
- 1x CP Lab Application Module Output
- 4x Set of work pieces
- 1x NetLab Twin Package
- 1x Energy Measurement System
- 1x Energy Monitoring Package
- 1x Web shop for MES4
- 1x Equipment Set TP 1312 Smart Sensors
- 1x IoT Gateway
- 1x CIROS Software License
- 1x MES4 Licence for CP Lab
- 1x PC with TFT-monitor for MES
- 4x TIA Portal
- 1 x IIoT Kit



For more information on the single workplace CP Lab, please download our offer here.

We recommend to please order soon. Delivery time due to availability.

Included in both workplaces:

Measuring: Two laser distance sensors allow the analogue differential measurement of work pieces

IIoT: A single-board computer equipped with an HD camera runs the machine learning software

Smart Sensors: IO-Link sensors enable real-time monitoring and smart applications

IoT Gateway: An edge computing gateway connects the shop floor to the Industrial Internet of Things

Energy Measurement Box: Industrial power and air sensors are integrated into a monitoring system

NetLab: Two managed switches and two firewall routers enabling IT security and support scenarios

CIROS: CIROS allows the factory simulation including faults and process optimization

MES4: With MES4 the production is controlled easily and transparently

Energy Monitoring: Energy dashboards provide transparency and support efficiency improvements

Web Shop: The configurable web shop connects eCommerce and shop floor



For more information on the system workplace CP Lab, please download our offer here.

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Technology trends translated into learning solutions

Developing the skills of young talents



Image sources: WorldSkills, Festo

Skilled workforce

Our world is characterized by rapid technological progress. Tomorrow's skilled workers are faced with the challenge of constantly keeping pace. Lifelong learning has become the new normal.

Festo focuses on the technical skills development of both apprentices and professionals. In 2021, the Festo Vocational Education and the Festo Lernzentrum Saar in Germany were awarded 'Center of Vocational Excellence' by WorldSkills Germany.

"Participating in the competitions is a lot of fun. These young people have a decisive advantage on top. They can apply their technical knowledge about RFID implementation, Node-RED or PLC programming practically tomorrow in industry. They have highly sought after in-demand skills and will be immediately employable in the job market."



Sasa Simovic,
Skill Competition Manager
Industry 4.0 at WorldSkills and
Technical Expert at Festo Didactic

Festo Didactic SE

Rechbergstrasse 3
73770 Denkendorf
Germany
Phone: +49(0)711 3467- 1448
sasa.simovic@festo.com
www.festo-didactic.com

For more information on the WorldSkills Lyon 2024 Industry 4.0 learning solution, please contact your local Festo sales office or our headquarters.