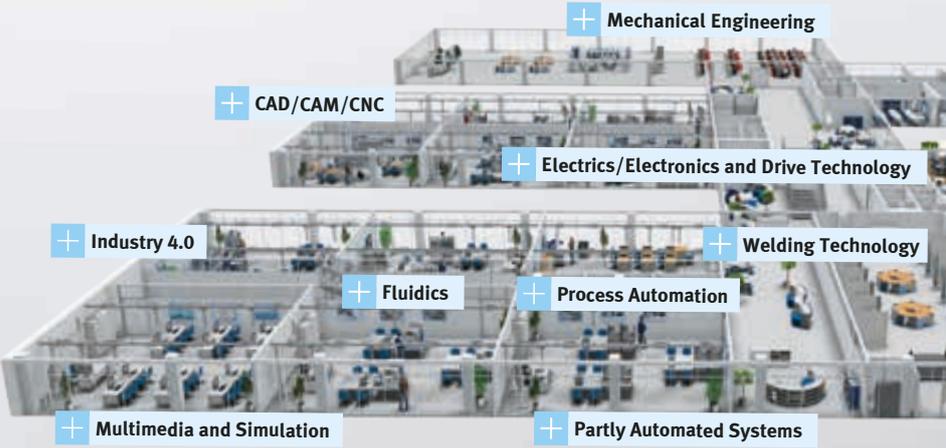


Holistic and turnkey education solutions



Laboratory and workshop equipment for science, technology, and education



At the forefront

Today, we live in a knowledge economy and in the age of global networking. Production locations and jobs can only be maintained if all employees have access to the best possible basic and further training. Knowledge is a resource that gives a decisive advantage in international competition, and is a guarantor of success especially in demanding industry segments. In many cases, an employee's original expertise will no longer be sufficient to keep up with the latest developments in the working environment.

Investing early in basic and further training pays off in every possible way. The promotion of lifelong learning thus becomes your most productive long-term investment for the future. The aim of Festo Didactic is therefore to maximize the potential of learning in schools and training centers and to develop skills sustainably in industrial companies around the world.

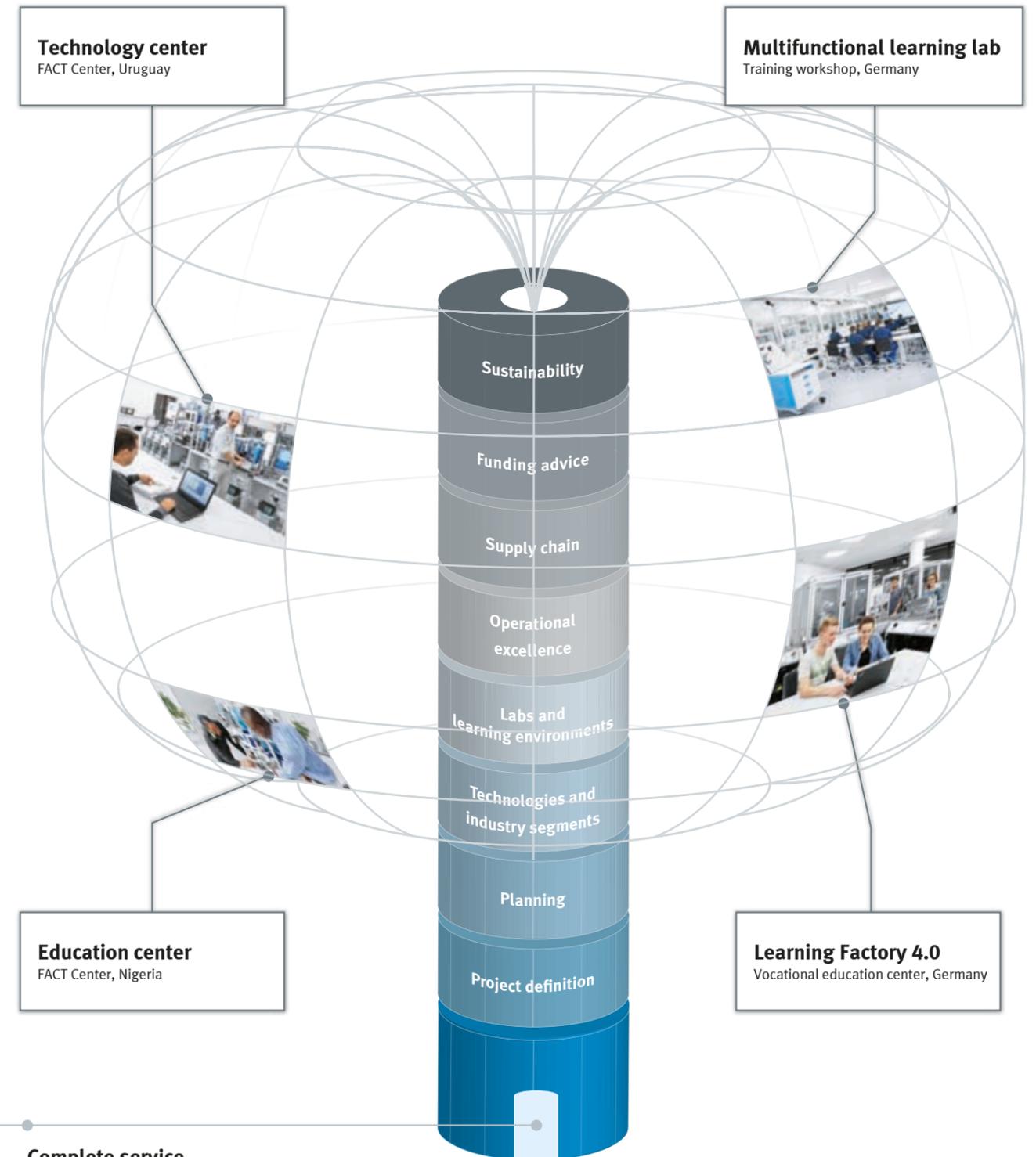
As a leading global partner for companies and educational institutions, and as a family owned company, Festo is deeply committed to contributing to the development of education and learning environments and the worldwide transfer of knowledge.

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Holism

Your key to success is defining a holistic training solution tailored to your needs and goals.



Staying on target

Right from the start of the project, we help you to define and satisfy your specific training requirements so you can reach all your goals, both financial and educational. At Festo, we integrate training and education with the industrial sector, ensuring that your basic and further training package is tailored to real industrial requirements.

Scope of service

Build on our unique range of learning systems and technologies when conceptualizing, planning, and equipping your customized labs or workshops.

- Industrial training centers
- Vocational training centers
- Laboratories for universities and colleges
- Learning factories for research and science

Complete service

Enjoy the full support of your own personal contact person, right from the first day. Throughout the entire course of the project and in every phase of the project, you receive everything from a single source: project management, installation, commissioning, and maintenance. To ensure the sustainability of your success, we offer you comprehensive service for turnkey education projects in more than 53 countries around the world.



Multifunctional learning lab,
training workshop, Germany

Flexibility

Multifunctional learning labs like this training workshop for pneumatics, mechatronics, and factory automation offer a versatile range of possible uses, for individual tailored solutions.

The room's equipment and fittings can be used for a wide range of different subjects. The furnishings are variable in use, allowing the room layout to be adapted quickly and easily to suit changing requirements. Expansion of the learning space is also possible at any time.

The flexible ceiling system is ideal for both theoretical and practical instruction, with suitable equipment for every learning environment. Connection ports for energy, compressed air, and data are located directly at the learning station. The utility supply lines are routed via the room's ceiling, and can be lowered individually.

The quick conversion times between the various learning scenarios permit maximum flexibility and efficient utilization of the rooms, whether for individual or group work on the computers, project-based teaching, or classroom-based teaching of theory. Everything needed for the required learning environment was considered during the collaborative project definition phase.

Classroom-based training



Technology training



Project work



Project facts

Multifunctional learning lab, training workshop
Opened in 2016

Customer

- Industrial company in Germany

Technologies

- TecDesign: ceiling system, Frameline, storage furniture/roller containers
- Pneumatics and electropneumatics
- Energy-efficient compressed air management
- Mechatronics and factory automation, fundamentals of Industry 4.0

Definition

Our many years of productive knowledge exchange with industry will help you define the exact training requirements for your situation.



Project definition

Benefit from our experience and expertise right from the start when defining your training requirements. Whether you want to replace existing installations with new equipment or would like to establish a new field of knowledge in your training facility, our employees all over the world will give you top-quality advice.

Project planning

Design your laboratory for optimum utilization by means of versatile training equipment designed to meet industrial requirements. We work with the latest planning tools to provide maximum security in the planning process and to advance your project both quickly and effectively.



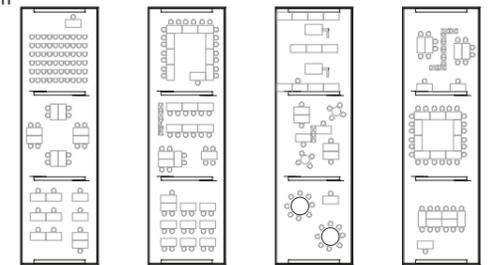
Step 1: Brainstorming

Working together to study and define your needs—with good ideas for efficiency and cost reduction, such as multipurpose training rooms. Together we identify what knowledge and equipment you really need, and what you don't.



Step 3: 3D planning

Lab plans in 3D arouse interest and enthusiasm for the project through their realism. In this way they can often help to win over decision-makers in charge of funds and budgets.



Example 1 Example 2 Example 3 Example 4

Step 2: 2D planning

A room design in 2D allows an exchange of opinions about different layout options. It illustrates the development of room and lab plans designed to meet the particular training requirements that are to be fulfilled by your training facility.

Room planning

Safety and functional design are at the heart of our room and building planning. We consult with our partners, coordinate with architects, and undertake site analyses and safety analyses. You receive detailed 2D and 3D CAD plans providing realistic representations of your preferences prior to implementation.

In three steps – professional lab design for any requirements.



FACT Technology Center, Uruguay

Foresight

When planning the FACT* Technology Center in Uruguay, the widest possible range of options was considered to ensure the best possible match for the market—such as dual education based on the German model, or training towards a qualification as a mechatronics technician.

Training and education projects always require a long-term commitment from all participants. In matters of training and education, a holistic and sustainable approach is therefore the most efficient—with a view to the long, medium, and short term. Often five years will pass between the original idea and the implementation of a project. It usually takes a further 3 to 5 years before output is produced in the form of training programs. For this reason, Festo always takes medium-term (6 or 3 months) training requirements into account, as well as short-term training for employees.

The budget in Uruguay was planned with foresight, investing not only in technology but also in expertise, training, and quite specifically in a marketing strategy and sales promotion. This makes it possible to deliberately intensify both the university use and the industrial use of the five labs with their various learning environments.

* FACT (Festo Authorized and Certified Training)

Project facts

FACT Technology Center, Montevideo, Uruguay
Opened in 2015

Customer

- Ministerio de Industria, Energía y Minería (MIEM)
- UTU—Universidad del Trabajo del Uruguay

Technologies in 5 learning labs

- Multimedia and simulation
- Pneumatics, electropneumatics
- Hydraulics, electrohydraulics
- Electrics, electronics, and drive technology
- Process and factory automation



Requirement

We command expertise as automation specialists in every industry segment, and are experienced in technological knowledge transfer through teaching.



Industry segment expertise

With us, your requirements are in the best of hands. As a leading automation expert, Festo caters to customers in all industry segments. Consequently, Festo Didactic knows which skills employees in the industry need and which technologies are required in the relevant labs in order to teach the necessary competencies and achieve the desired learning outcomes.

Technological expertise

Regardless of the vocational fields involved, Festo Didactic covers the full spectrum and supplies learning labs with all the necessary technologies. As a driving force in technical education, Festo Didactic also knows the technologies and competencies that will be required in the future – such as Industry 4.0 and Aquatronic – and how to implement them through teaching.



Leading partner in all industry segments

- Metallography and material testing
- Electrical engineering
- Mechatronics
- Factory and process automation
- Water and wastewater engineering
- Machining technology
- Agricultural engineering
- Green energy
- Building automation systems
- Automotive technology
- Robotics



Workbenches and workstation systems

Find out more about the full range of our labs and learning systems on the following fold-out panorama page.

Comprehensive service

For equipment, workbenches, and fittings we offer you technical reliability, centralized procurement, guaranteed functionality, and turnkey processing. Solutions that extend beyond our own Festo equipment are covered by our selected, best-in-class industry partners.



Technologies in industrial quality

- Security of investment due to the outstanding quality of the tools:
- Chip-removal machining
 - Measuring and test instruments
 - Operating and workshop equipment
 - General tools
 - Handling technology and machines



An eye to the future

Renewable energies are becoming increasingly important for our energy supply. Industries with an ecological focus are creating new markets and require well-trained personnel. We offer solutions that prepare trainees and professionals for the implementation and optimization of new, sustainable technologies and services.

Everything from a single source — turnkey education solutions with guaranteed functionality.



CAD/CAM/CNC

Professional and future-oriented teaching of CNC knowledge

Future-oriented CNC training means teaching students and trainees at the highest industrial standard: from the machine tools and software to the teaching materials. The CAD/CAM/CNC lab provides a rapid and smooth introduction to professional CNC training. 1:1 programming with software identical to the machine control, practice-based learning, programming and simulation on a computer for greater machine availability, and test runs on the computer for enhanced expertise and reduction in errors.



Industry 4.0

Training for the factory of the future

Flexibility, agility, openness to change, and efficiency—these are the qualities that will be required of production in the future. To facilitate a successful transition in basic and further training, the Industry 4.0 lab encompasses everything from individual workstations to a complete learning factory. Based on our classic training materials for mechatronics, the trainees are introduced step-by-step to Industry 4.0 content, all the way up to the Cyber-Physical Factory. Since learning areas and needs are constantly changing, the lab is modular and flexible in structure and can be adapted and expanded at any time to meet your individual requirements.



Fluidics

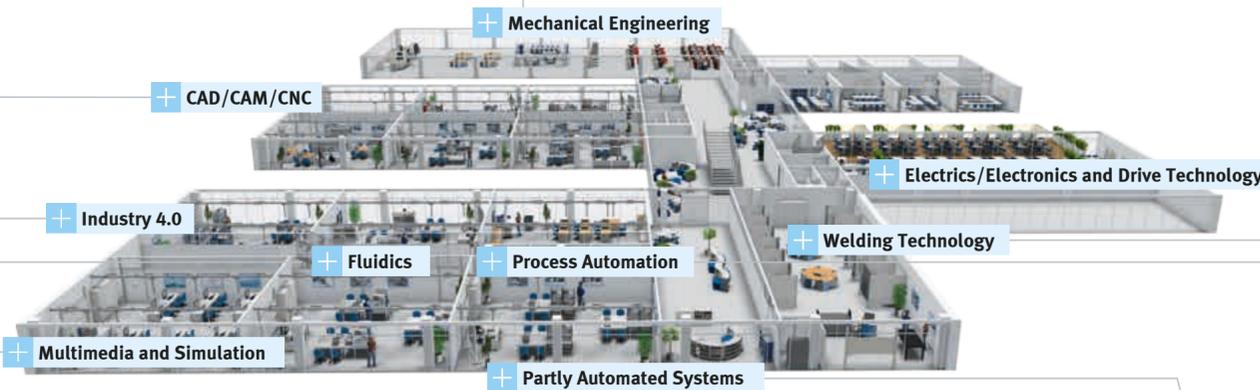
Fundamentals of pneumatics and hydraulics

Experience from more than one thousand fluid power courses forms the basis for successful teaching of the fundamentals of pneumatics and hydraulics. The design of the lab and the selection of the teaching components and media enable periods of independent learning with the training programs Connected Learning with Tec2Screen®; circuit design and simulation with FluidSIM®; practical implementation, functional testing, and optimization of the circuits in group work with the equipment sets.



Range

Equipped with the latest learning systems, our range encompasses all the necessary labs for all technical vocational fields.



Mechanical engineering

We are committed to quality

Especially when it comes to basic and further training for metalworking, the use of high-quality machines and tools are essential. We have partnerships with competent manufacturers who assure a continuously high standard of quality. The metalworking lab is fully equipped with workbenches, machines, and all the necessary tools. We guarantee the highest precision, sturdy designs, easy operation, high safety standards, exceptionally long service lifetimes, and a supply of spare parts for well over 10 years for all the machines installed in the lab.



Electrics/electronics and drive technology

The vital first step in training and in automation technology

Training in the basic disciplines of mechatronics is the first vital step in training of automation. All important aspects of electrical and electronic systems, including contact circuits and electric actuators, are taught in this lab. The lab equipment is matched to the technology packages and contains the necessary energy supply, mounting frames for experimentation plates, and all the required accessories.



Welding technology

High-quality training in various welding processes

Welding is used in virtually all workshops and industrial companies that process metal, to produce a variety of products economically and to the level of quality required. The welding lab covers the most important processes such as MIG/MAG/TIG/MMA welding and plasma cutting. High-quality welding equipment, fully equipped welding booths, and the latest simulation and demonstration tools are used to provide thorough training, resulting in recognized qualifications.



Multimedia and simulation

Realistic virtual teaching of knowledge and programming skills

The use of realistic simulations allows optimum preparation of various technologies. The lab includes all the software tools for PLC and robot programming, CAD/CAM/CNC, e-learning, and Connected Learning with Tec2Screen®. The Classroom Manager is used to manage target groups, contents, and learning media, allowing you to organize learning groups and put together customized training packages.



Partly automated systems

Fostering technological experience and knowledge, as well as interpersonal skills

It is becoming more and more common for skilled workers and technicians to be responsible for operation and maintenance of complex automated production systems. This requires the seamless interaction of all the technologies involved. The learning stations in the automation lab form the basis for general technological training using practical problems from actual operational applications. This provides the perfect platform for analyzing, understanding, and mastering the interaction of mechanical systems, pneumatics, electrical systems, control technology, and communication interfaces—all absolutely critical for successful management of complex networked systems.



Process automation

Instrumentation and control and core processes in water and wastewater engineering

Governments, local authorities, and companies have the responsibility of providing water in sufficient quality and quantity to inhabitants and industries. Specialist knowledge and skills are crucial in achieving that goal. The necessary fundamentals of closed-loop control are communicated in a lively manner in the lab using EDS Water Management. Furthermore, the learning stations cover the entire water cycle, from water purification through water supply to wastewater treatment.





FACT Center, Nigeria

Commitment

During the first visit of the Festo engineers to the site in Lagos, it was clear from the condition of the building that additional conversion work would be necessary in order to realize the Nigerian government's training plan. The plan envisioned the training of competent professionals in the classrooms and making them available to local industry.

Festo firmly resolved not to leave the additional conversion work of the building to its partner, but instead to take on the responsibility itself despite the financial risk. The long-term commitment displayed by this use of funds was backed by the World Bank in its decision on the outcome.

The training of the Nigerian trainers was also undertaken in collaboration with local partners. Today, these committed and highly motivated trainers are indispensable. They are now also providing valuable support for new training projects in Nigeria. For instance, they made a major contribution to the successful establishment of another FACT* training center in the difficult-to-access north of Nigeria.

* FACT (Festo Authorized and Certified Training)

Before



After



Project facts

FACT training center, Lagos State, Nigeria
Opened in 2012

Customer

- Government Technical College Agidingbi
In cooperation with Lagos Eko Project

Technologies in 2 learning labs

- Multimedia and simulation
- Pneumatics and electropneumatics
- Hydraulics and electrohydraulics
- Process and factory automation

Skills creation

We equip employees in industrial companies and teachers in educational institutions with skills—with trainer training, the latest media, and learning systems.



Training expertise

For sustainable success in learning, we combine industry-oriented learning systems with practical training, and offer basic and further training with an international outlook. We train our apprentices and trainees at our headquarters in Esslingen in Germany. Other Festo training centers are located in Rohrbach (Germany) and in Mason (Ohio, USA) and Suzhou (China).

Trainer training

Benefit from experienced, certified specialists with real-world experience. We train trainers, and offer specific train-the-trainer courses for our learning systems. You will thus not only gain technical understanding but also learn how to use and apply our learning systems in your classes.



Training and consulting

With our broad-based program, we give industrial companies the capacity to increase the performance of their supply chain and associated processes and to gain competitive advantages:

- Strategy workshop
- Analysis of processes
- System optimization
- Process optimization
- Change management
- Shopfloor management
- Skills management, personality, and meeting guidance
- and much more



Connected Learning

Our innovative learning concept “Connected Learning” combines the real world of training with the virtual world. This new dimension in learning brings together theory and practice in the direct interaction between software and hardware. It is implemented using the mobile, interactive, multimedia learning assistant Tec2Screen®.

FACT certification

FACT (Festo Authorized and Certified Training) is a seal of quality representing an internationally valid standard for teaching equipment and methods and for technical equipment in industrial automation and mechatronics. Every FACT center is tailored to the requirements of the local markets and industries and offers industry-oriented training courses to match those requirements.



Simulation and blended learning

Learn in a new dimension and seamlessly combine the virtual world with the real world:

- The electronic Classroom Manager manages target groups, content, and media
- The simulation programs of CIROS® or FluidSIM® provide optimum preparation for a variety of technologies
- STEP 7 classroom licenses ensure that every student can access the industrial controller
- The virtual world and the real world interact in Connected Learning
- Our patented solution for Connected Learning: Tec2Screen®



Designing learning processes

Any future-oriented training needs to base its day-to-day content on work and business processes. We design learning strategies and offer training to develop the right skills to prepare your graduates for the job market in the best possible way.

The perfect training—
knowledge and
experience at first hand.



Learning Factory 4.0
Vocational education center, Germany

Enthusiasm

The start-up of the Learning Factory 4.0 in fall 2016 marked the rapid entry of the Philipp-Matthäus-Hahn school in Balingen in southern Germany into the age of Industry 4.0. In 2015, the school received the go-ahead for the project, which was backed by the state of Baden-Württemberg and funded by businesses in the region.

In a few short months, Festo Didactic set up the five learning labs for a wide range of technologies, which brought an enthusiastic reaction from the vocational and technical students, their teachers, and local industries.

With the Learning Factory 4.0, the school takes on two important roles in the region: First, it strengthens the skills of the trainees, skills they will need in computerized production. The Learning Factory also provides hands-on experience of Industry 4.0. The school will also be an important partner for many industrial companies in the region in the future, offering specialist further training tailored to the requirements of each branch of production.

Alongside the Industry 4.0 Learning Factory, all the requirements of the manufacturing sector are met. The two CNC labs allow the students to learn about the production techniques of milling and turning. At the eight hydraulics workstations, they can be taught the fundamentals of hydraulics on a practical basis.



Project facts

Learning Factory 4.0, Gewerbliches Schulzentrum, Balingen
Opened in 2016

Customer

- Philipp-Matthäus-Hahn Schule,
Gewerbliches Schulzentrum, Balingen

Technologies in 5 learning labs

- Hydraulics
- CAD/CAM/CNC, turning and milling
- Industry 4.0 fundamentals
- Industry 4.0 training factory

Security

For sustainable project success, we guarantee outstanding project management, high-performance procurement and logistics processes, and sound funding advice.



Sustainable project success

- Thanks to optimized processes and 100% implementation
- Established project methods
 - Centralized spare parts warehouse
 - Technical documentation
 - Setup, installation, and commissioning
 - Preventive maintenance
 - Extended warranties and after-sales service
 - International standards
 - Worldwide on-site service

Funding advice

- Different options for project financing
- Access to funding from development banks
 - Public-private partnership programs
 - Offset agreements
 - Financing models



Outstanding quality

The outstanding quality of all tools and pedagogical training materials ensures the necessary investment security. Festo Didactic is certified as a provider of education and training in accordance with DIN ISO 9001.



Logistics

- Reliable and punctual delivery all over the world
- Smooth procurement management from a single source, even in a difficult environment
 - Strategic warehouse management worldwide
 - Specialized expertise in direct delivery to multiple locations

Value creation

The supply of customized, turnkey learning labs from a single source puts our customers in the best position for value creation. All the factors come together in synergy: procurement of the learning systems and laboratory equipment from a single source, optimized logistics processes, professional project management, training of teachers and trainers, and commissioning of the learning systems.

Sustainability

It is important for us that our learning solutions work over a long period of time. We will only supply you with products and solutions that will benefit you well into the future. We are more than willing to recommend low-cost solutions to you when they make sense in the long term, from a holistic perspective.

Project security

You can depend on your project running smoothly in every way. We have at our disposal more than 50 years of experience, optimized processes, and cumulative expertise in teaching and training — from the definition of goals through to logistics and financing options, often going far beyond the end of the project itself. You can rest assured that we always operate at your level.

From first contact onward — guaranteed, certified project implementation.

Festo – global partner for automation and training

Festo is an internationally leading supplier of automation technology and solutions for technical education and training. As a global, independent family-owned company with its headquarters in Esslingen, Germany, it has become the performance leader in its industry over the last 50 years. Thanks to its innovations and problem-solving competency in all areas of pneumatics as well as its unique range of industrial training and vocational education programs.

In the field of factory and process automation, the company currently provides more than 300,000 customers in 200 industry segments around the world with pneumatic and electric drive technology, as well as the latest training solutions for industrial environments.

The Festo Group has a global presence with around 18,700 employees in 250 locations.



Festo Didactic

Festo Didactic is the world's leading service provider for basic and further technical training. The company's range of products and services provides customers with holistic training solutions in all fields of technology for industrial automation such as pneumatics, hydraulics, electronics, electrical engineering, mechatronics, CNC, energy efficiency and mobility, renewable energy sources, industrial maintenance, HVAC, and telecommunications.



We design and implement learning systems, training environments/ laboratories, training factories, e-learning solutions and training programs, right on up to complete training centers which systematically prepare people for work in dynamic and complex industrial settings. Our goal is to maximize learning success in schools and training centers, and to ensure lasting skills development in industrial companies around the world.



Partnerships

We work solely with premium providers who we select with great care. As a result, we always offer you best-in-class technologies.

Our partners:

- EMCO machine tools
- Siemens control technology
- Mitsubishi robotics
- Hohenloher furnishings
- and more



WorldSkills

WorldSkills has been the leading platform for international benchmark tests in vocational technical training for many years. Festo looks forward every year to this vocational world championship: as an employer, as a trainer of apprentices and trainees, as a provider of materials and solutions in the field of technical training, and as a promoter of the dual system for vocational training. It is our goal to support and advance young people at college, high school, and in industry in the best possible way through our products and services.

Festo Didactic SE

Rechbergstr. 3
D-73770 Denkendorf
did@festo.com
www.festo-didactic.de

Festo Didactic Ltée/Ltd

675, rue du Carbone
Québec (Québec) G2N 2K7
services.didactic@festo.com
www.festo-didactic.com
www.labvolt.com

Festo Didactic Inc.

607 Industrial Way West
Eatontown, NJ 07724
services.didactic@festo.com
www.festo-didactic.com
www.labvolt.com