Festo Didactic

Pioneering today's innovations in technical education

Festo didactic is the equipment and solution provider for technical education. We design and implement learning laboratories, educational equipment and programs that train people to perform in highly dynamic and complex industrial environments. Our goal is to maximise the learning success in educational institutions and industrial companies around the globe.

Over 40 years experience developing solutions for education and training across a broad spectrum of automation technologies.

www.festo-didactic.com/ie
Everything from a single source

Festo Didactic brings over 40 years of experience into developing solutions for fast learning and successful retention over a broad spectrum of technologies:

- Mechatronics
- Factory and process automation
- Electrical engineering
- Renewable energies
- Electronics
- Fluid power
- Refrigeration and HVAC
- Industrial Maintenance
- Instrumentation and process control
- Telecommunications

From fundamental to complete training

From basic training and technology-specific courses to planning, control, and handling of complex system, to fully-furnished learning centers- we have created a world of learning tailored to your needs for efficient study and guarantee learning success.

Modular and future proof

What characterizes our learning system is their high practical relevance achieved through the use of real industrial components combined with the intuitive teaching of the educational content. The systems are modular, allowing for expansion and flexibility, making your investment future-proof with no dead-ends.
Many paths to successful learning

Festo Didactic is committed to developing innovative, engaging, and effective learning tools and content to meet the changing and challenging needs of students and educators.

Our comprehensive, competency-based curriculum integrates several types of media to accommodate different types of learners and to bring flexibility to the learning process.

Textbooks, workbooks, guides, work sheets, simulation programs, web-based training packages, and more, contribute to building knowledge, skills, and troubleshooting abilities in a diverse spectrum of subject areas.

A wide range on training systems

Festo Didactic strengthened its leadership position as a supplier of technical education solutions through the acquisition of Lab-Volt Systems in June 2014. This merger created the ability to be the singular source worldwide for the study of technologies and curriculum that cover an extensive range of products and services.
Integrated Learning Systems

Fluid Power Training
Festo offers an extensive line of training packages for Pneumatics and Hydraulics training.

Areas of study include:
- Basic and Advanced Pneumatics/ Electropneumatics
- Closed Loop Pneumatics
- Vacuum Technology
- Basic and Advanced Hydraulics/ Electro- Hydraulics.
- Proportional Hydraulics
- Mobile Hydraulics

Electrical Engineering

Professional laboratory equipment and furniture for electrical engineering, from single workstation to complete laboratory configurations, can be configured depending on user need.

Areas of study include:
- Fundamentals of Electricity and Electronics
- Fundamentals of Circuits and Contacts
- Sensors and PLCs
- Motor Controls
- Servo and Stepper Motor Technology
Introduction to Mechatronics and Process Control

**Mechatronics**

MecLab is a turn-key learning system that replicates real industrial production processes and provides an introduction to the principle of Mechatronics.

Areas of study included:
- Proper use of technical terms
- Planning developing and setting up technical experiments.
- Understanding technical documentation
- Creating and using schematic diagrams
- Building models and creating simulations.
- Developing and constructing electrical, electronic, and pneumatic circuits.
- Understanding pneumatic and electrical actuators, sensors and controllers.
- Using computers as tools for programming and simulation.

**Process Control**

EduKit PA is used to introduce students to the fundamentals of open and closed loop control. The basic kit allows for reading, recording and controlling of the process without the need for a PC or sophisticated control technology. The advanced kit incorporates automatic control and feedback with included computer software or external controllers.

Areas of study include:
The construction/assembly of a process control system.
- System start-up procedures.
- Recording measured valves with changes in valve positions.
- Variations of voltages to adjust pump actuation.
- Observation of level, pressure, flow and time response.
Mechatronics systems and process automations

Mechatronic Systems Trainers

The MPS 200 series of Mechatronic trainer is ideally suited to teach the various elements of any Mechatronic system. This Modular Production System incorporates a combination of hardware and simulation software to enable students to learn:

- Functional relationships of the components of complex Mechatronic systems.
- To plan and organize production work flow.
- To follow information flow and energy flow in electrical, pneumatic and hydraulic sub-systems.
- The manufacturing and automated assembly of components
- To commission, troubleshoot, and repair Mechatronic systems
- To communicate using industrial network protocols, including DeviceNet and

Process Automation

Festo process automation trainers enables flexible and cost-effective teaching of the principal elements of any industrial process control system

Elements covered included:

- The measurement, control and regulation of electrical and process engineering variable - temperature, level, pressure and flow rate.
- Using various control methods.
- Manual/ open loop control.
- Two-point/closed loop control.
- P, PI, PID control
- FluidLab PA, a labView-based software simulation program, is used to visualize the dynamics of all process variable.
Flexible Automation and Advanced Process Automation

Flexible manufacturing system.

Festo MPS/ FMS product range enhances the learning experience in flexible manufacturing systems when a conveyor is added to an array of MPS station. These MPS stations become “workcells” capable of producing multiple variations of a product on the same system.

Elements covered include:

- Production planning and process optimisation.
- Network communications among workcells.
- Production process controlled by a real PLC.
- Multi-axis robots, vision systems, servo-electric drives and many other options are available.
- Supervisory software that incorporates process visualization to facilitate learning

Complete process automation systems

The MPS PA-204 enables the teaching of sophisticated process automation technology typically found in industry today. Modern process automation systems utilize “closed-loop control” that relies on continuous feedback from various sensors and meters to maintain precise control of a complex continuous production process. Station functions include Filtering, Mixing, Reacting and Bottling and can be combined in various configurations or with our MPS stations. These automation systems are common to many industries including chemical/petro-chemical, pharmaceuticals, water treatment, and food processing.

Elements covered include:

- Set-up wiring, and commissioning of process automation systems.
- Measurement of electrical and process engineering variable, such as level, flow rate, pressure and temperature.
- Networking of process engineering systems.
- Process operation and monitoring, systems management.
- Parameter setting and optimization of P, PI or PID controllers.
- A modular, flexible, and scalable system that meets all training goals.
Customized and hybrid automation solutions

Hybrid and customized production techniques require very flexible training system, to properly respond to the training aims of these complex systems. Festo Didactic’s Solution Center Group can design almost any application-specific system, whether a discrete manufacturing system, a process automation system, or any combination of the two.

These systems feature the latest PLC controls technology, HMI, sensor technology, robotics and vision systems.

- Hybrid factory solutions are commonly found in the food, confectionery and pharmaceutical industries.
- Solutions often involve intelligent drives and high-precision mechanical components.
- Data acquisition must be carefully measured.
- Integrated communications interfaces ensure safe, optimised process automation.
Industry 4.0

Cyber Physical Systems (CPS) permit intelligent networking of people, products and production equipment. They fulfil the prerequisites for digital production by integrating Internet based communication networks with physical production systems.

The cyber physical Factory is the apex of our progressive modular learning system for training in Industry 4.0. It authentically replicates the stations of a real production system, integrating relevant mechatronic and automation technologies. With its training flexibility and expanding ability the CP factory represents numerous aspect of the industry 4.0 value chain including:

- Integrating of manufacturing division into digital production.
- Automated and manual assembly.
- Logistics in autonomous systems.
- Production planning and production control / MES.
- Lean production as a basis for Industry 4.0.
- Smart maintenance to monitor systems and system states.
- Quality assurance in smart factories.

CP Factory. The universal industry 4.0 research and learning platform.

You can customise the CP Factory for concentration on the topics most relevant to you needs in industrial automation technology, configuring in minutes your preferred factory layout.
Your Reliable Partner From The Planning Stage to Turnkey Hand-Over

Do you wish to realize a state-of-the-art and practice-oriented learning environment?

We support you in planning, designing and equipping your individualized laboratories and workshop by offering a wide variety of equipment and technologies in the field of technical education - everything from one single source.

Comprehensive range of every qualification need of the Industry.

Electronics, Factory and Process Automation, Green Energy, Agricultural Engineering, Automotive or Robotics. Our vast range of service covers most industrial areas.
CP Lab - Cyber - Physical Lab

Expandable industry 4.0 training content in a compact learning system

The cyber - physical lab is the professional and compact industry 4.0 learning system from Festo Didactic. It includes all the technologies and components needed for the practical and in-depth transfer of Industry 4.0 knowledge. The modular and flexible configuration offers a range of learning scenarios, from individual pallet transfer systems with integrated control right up to a connected production system with cloud services.

Training content (sample)

- Design and structure of flexible production plants.
- Recording information using intelligent sensors.
- Control using PLC.
- Control using embedded controllers.
- Communication based on open standard.
- Identification systems.
- Plug & produce: rapid changeover.
- Cyber -physical system.
- Manufacturing Execution System (MES): creating, managing, controlling and visualizing customers orders.
- Using cloud technology.
- Practical exercises.

Flexible and expandable.

- CP Lab - pallet transfer system: The CP Lab is flexible and can be expanded to adopt to changing requirements. The knowledge acquired can be gradually and thematically advanced to cover additional industry 4.0 - relevant material

- CP Lab - application modules: The application modules are placed on the belts, and depending on the module type, are controlled via I/O, PROFINET, TCP/IP, OPC, UA, or plug & produce interfaces, making them ready for use in no time at all. The application modules include a range of content and complexity levels so that the system can be optimally adjusted to your needs.
Building control technology
Creating a networked building in 8 modules

Introduction to building control technology. This module focuses on the fundamentals of electrical engineering/electronics and safety measures.

Energy-efficient lighting systems. This module offers an overview of lighting systems and covers all aspects of lighting.

Building automation. Modern building are characterized by intelligent solutions.

Smart Home. User-friendliness, energy efficiency and security.

Intruder detection and alarm systems. This module focuses on configuration, programming and commissioning.

Building management systems. This module allows you to clearly present and illustrate the relationship between heating, ventilation and air-conditioning.

Renewable energy. This module uses practical experiments to illustrate not only photovoltaic's, solar thermal, and wind energy, but also grid connections and smart grids.

E-mobility. This module conveys essential content, such as planning and installing a changing station.
FluidSIM 5.2
The well-known simulation software—now with electronics and electrical engineering.

FluidSIM is a comprehensive software for the creation, simulation and study of electropneumatic, electrohydraulic and digital circuits. You’ll be able to create circuits easily by using drag&drop. You only have to place the items in the circuit as you want to view them and build the circuit intuitively. Simple and effective.

Connected learning - Tec2screen
Connected learning- Tec2screen represents the link between the real and virtual worlds, and together with the base forms the core of the system. Courses and simulation developed by Festo Didactic deliver the content for learning, informing, controlling, measuring, regulating and programming, which can be linked to hardware via the Connects. Students can thus explore the exciting world of technology through interactive courses and experiments and directly follow the signal flow between software and hardware.
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