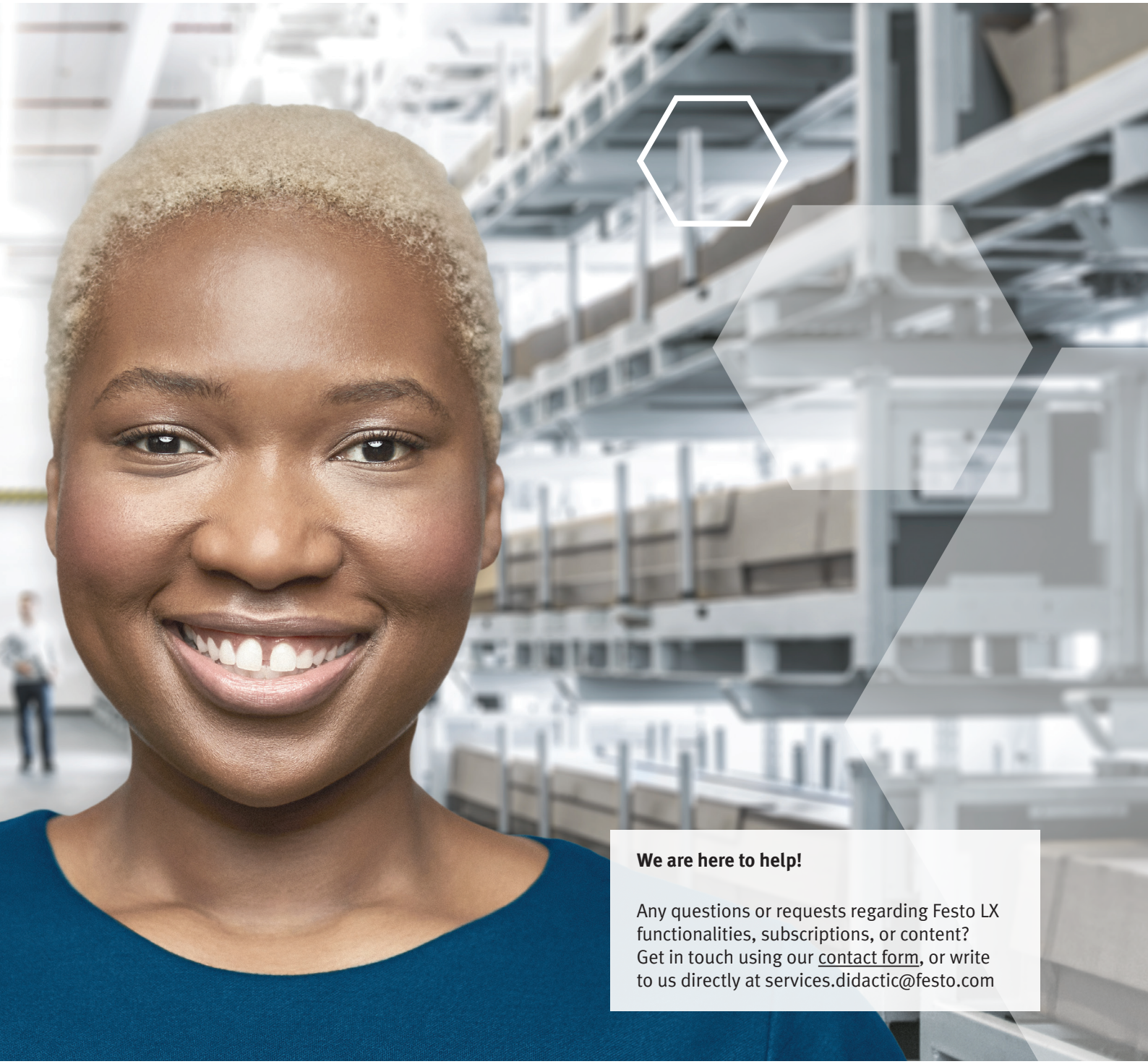
Festo Learning Experience
Content Catalog



Festo Learning Experience

The Digital Learning Portal for Individual Learning Experiences





We are here to help!

Any questions or requests regarding Festo LX functionalities, subscriptions, or content? Get in touch using our contact form, or write to us directly at services.didactic@festo.com

Types of Learning Content in Festo LX

From Theory to Practice — Flexible Formats for Every Need





eLearning Courses

Highly interactive learning courses. Storytelling-based, ideal for introduction topics.

eLab Courses

Practice with real systems. Hands-on training using Festo Didactic equipment and simulation software.

eTheory Courses

Clear technical explanations. And hardware-independent knowledge

Evaluation

Measure learning outcomes. Check progress and understanding.

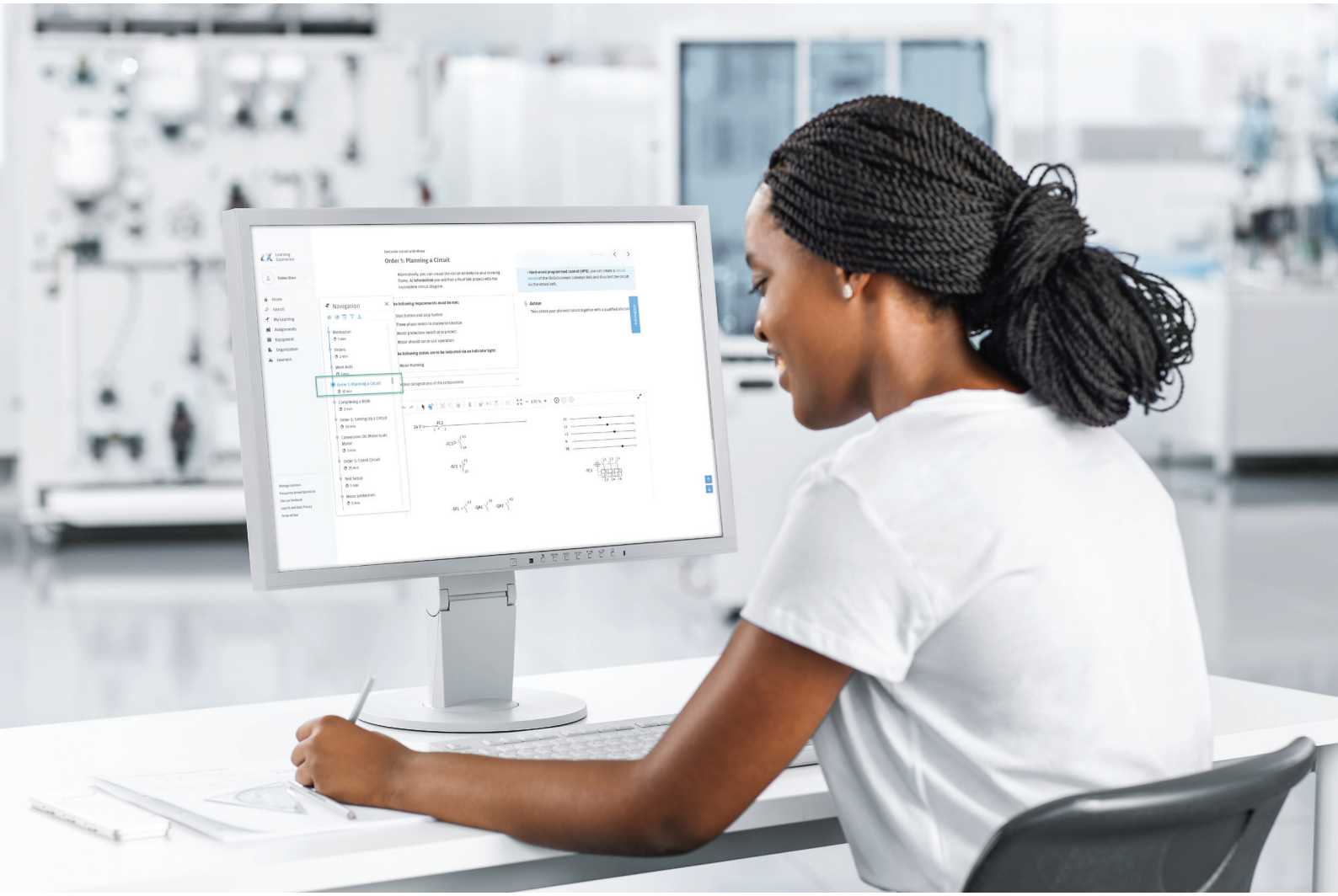
Video Learning

Learn visually, Learn fast. Expert explanations in simple steps.

Learning Paths New

Structured learning journeys. Become an expert by following our recommended course sequencing

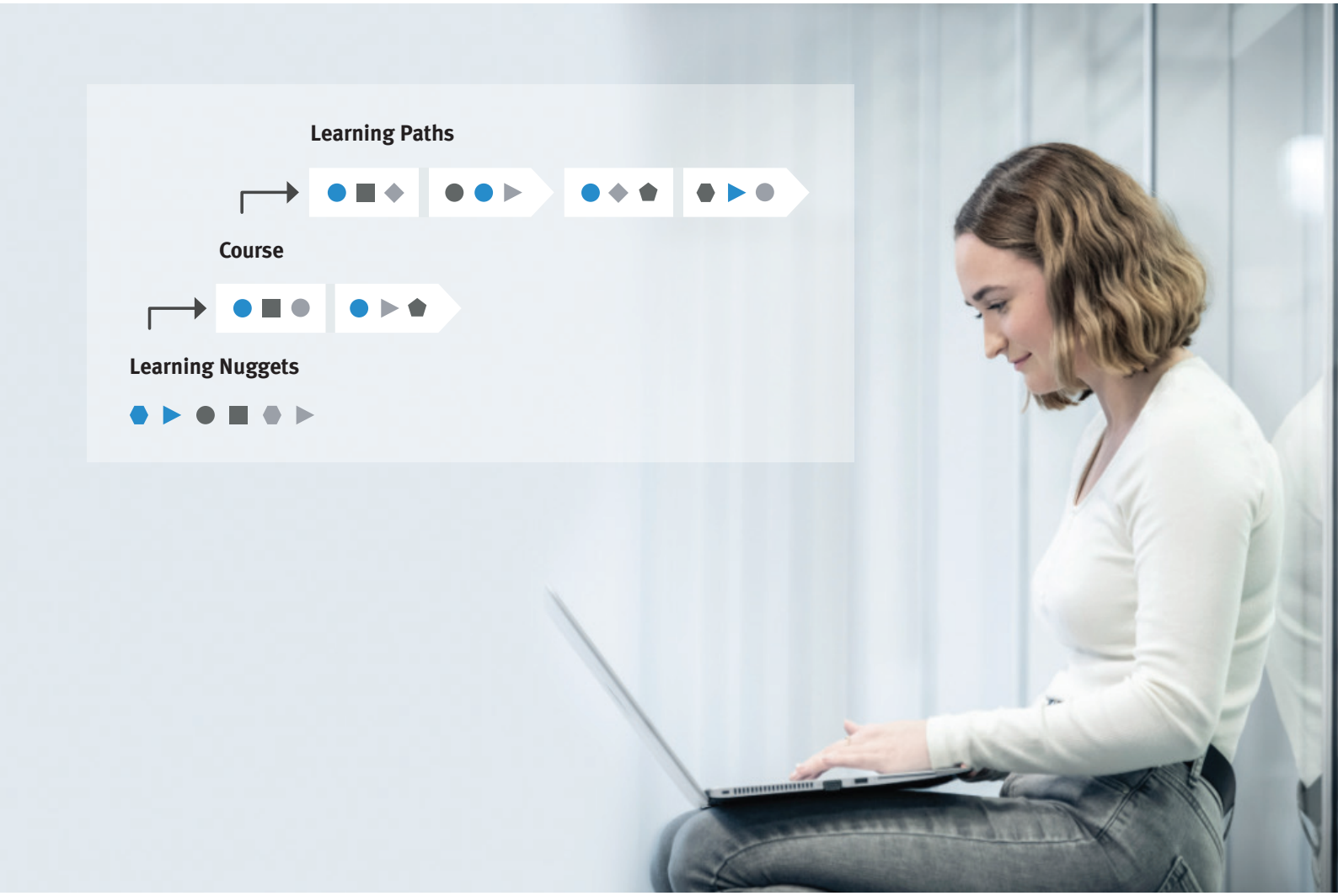
How Festo LX Adapts to Every Learner



The Power of Learning Nuggets

Each course in Festo LX is built from Nuggets, which are compact, self-contained units. Nuggets can be combined, reused, or customized to match specific learning goals. This modular structure allows teachers and learners to focus on exactly what is needed, ensuring flexibility and targeted progress.

Learning Paths New

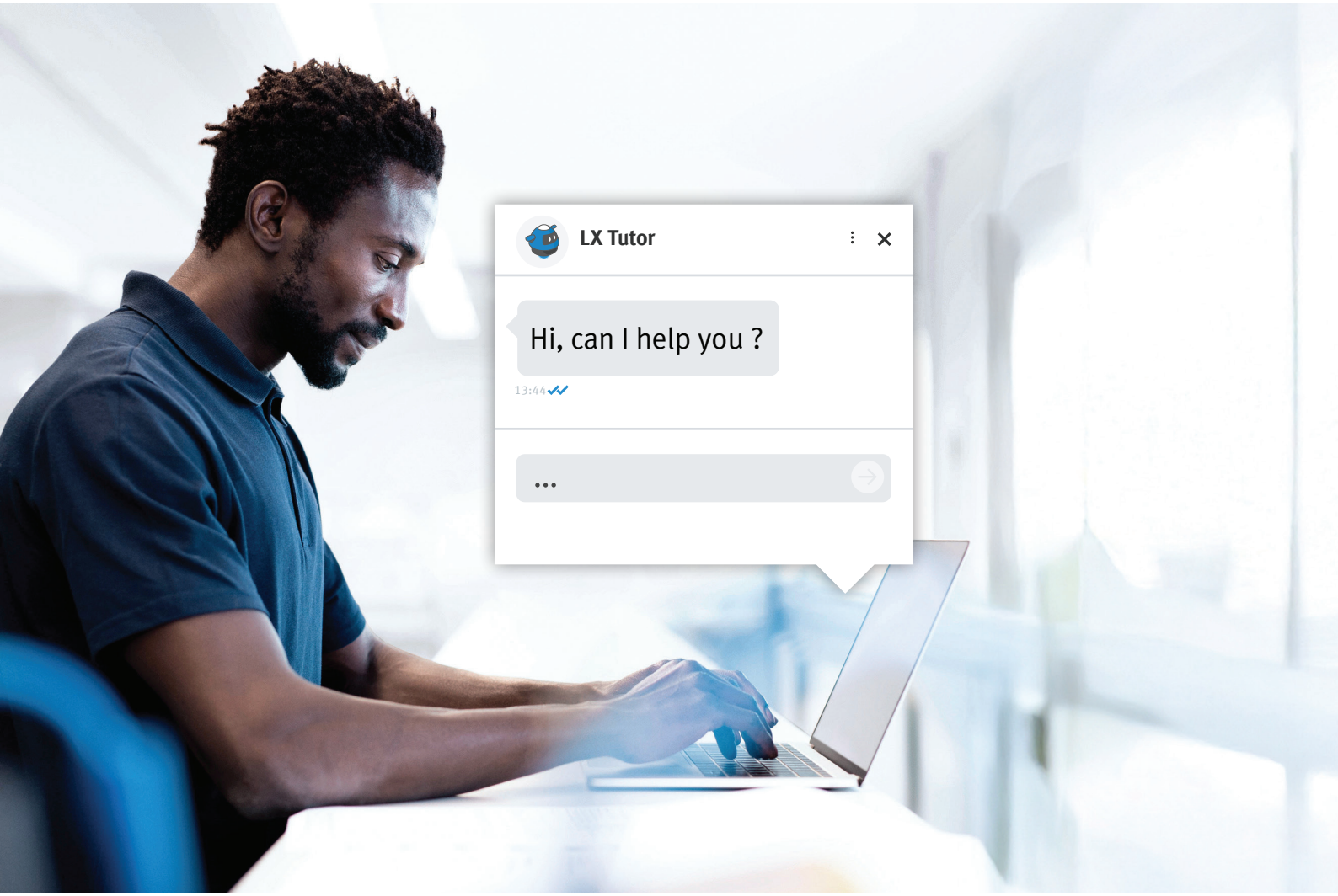


From Nuggets to Learning Paths

Learning Paths connect courses into meaningful sequences. They provide structure and direction, helping learners move step by step from basic knowledge to expert skills. Teachers can design custom paths or use predefined ones for specific job roles or technical topics.



LX Tutor New



LX Tutor – Your Digital Learning Assistant

With the LX Tutor, you receive real-time support directly within the Festo LX. The Tutor answers questions, gives hints during exercises, and guides users step by step through their learning journey. It also reacts proactively, offering reminders, explanations, or motivation whenever extra help is needed - like having a virtual coach always by your side.

What the LX Tutor Can Do?

- Answer content-related questions directly in the platform.
- Provide hints and explanations during quizzes.
- Guide users through their learning journey step by step.
- Offer encouragement when progress slows down.

LX Creator



LX Creator – Your Smart Content Builder

The LX Creator helps teachers and trainers build courses faster with the power of AI. Existing materials such as PowerPoint, Word, or PDF files can be imported, and the system helps to generate content, learning objectives, and interactive questions. In just a few minutes, complete and adaptable learning nuggets are ready to use.

What the LX Creator Can Do?

- Transform existing materials into structured learning content or build it from scratch.
- Generate questions, summaries, and objectives automatically.
- Create your own FluidSIM circuits
- Adapt content to different learning levels and topics.
- Save time and focus on what really matters — teaching.

Festo Didactic

Learning Experience




Software
Enabling exciting &
verse learning scenarios
th digital twin, VR, xR &
2-D simulations
FESTO
Electricity and Electronics
Fluid Power
IIoT and Industry 4.0
Factory Automation
Electric Power Technology
Pneumatic
Actuators

What Makes Festo LX Unique



Festo LX

is more than a learning portal— it is the central piece of our learning ecosystem that connects theory, practice, and innovation. As a cloud-based solution, it gives learners and teachers instant access to technical content and integrated simulations — anytime, anywhere. Festo LX combines flexibility with structure: it adapts to every learning style, supports different teaching methods, and links directly with Festo Didactic's learning systems for real hands-on experience.

With tools like the LX Creator and LX Tutor, powered by Artificial Intelligence, creating a personalized learning experience has never been easier. From short learning units to guided paths and integrated simulations, everything comes together in one seamless digital environment.

The Advantages of Festo LX at a Glance



FluidSIM New

Design.
Simulate.
Learn.

FluidSIM – Fully Integrated into Festo LX

FluidSIM, the world-leading simulation software for pneumatics, hydraulics, and electrical engineering, is now fully integrated into Festo LX and accessible directly from any browser, without the need for additional software or switching between windows or devices.

Several eLearning and eLab courses already include interactive simulation exercises directly linked to the learning content, allowing learners to visualize and test circuit behavior directly within the same digital environment.

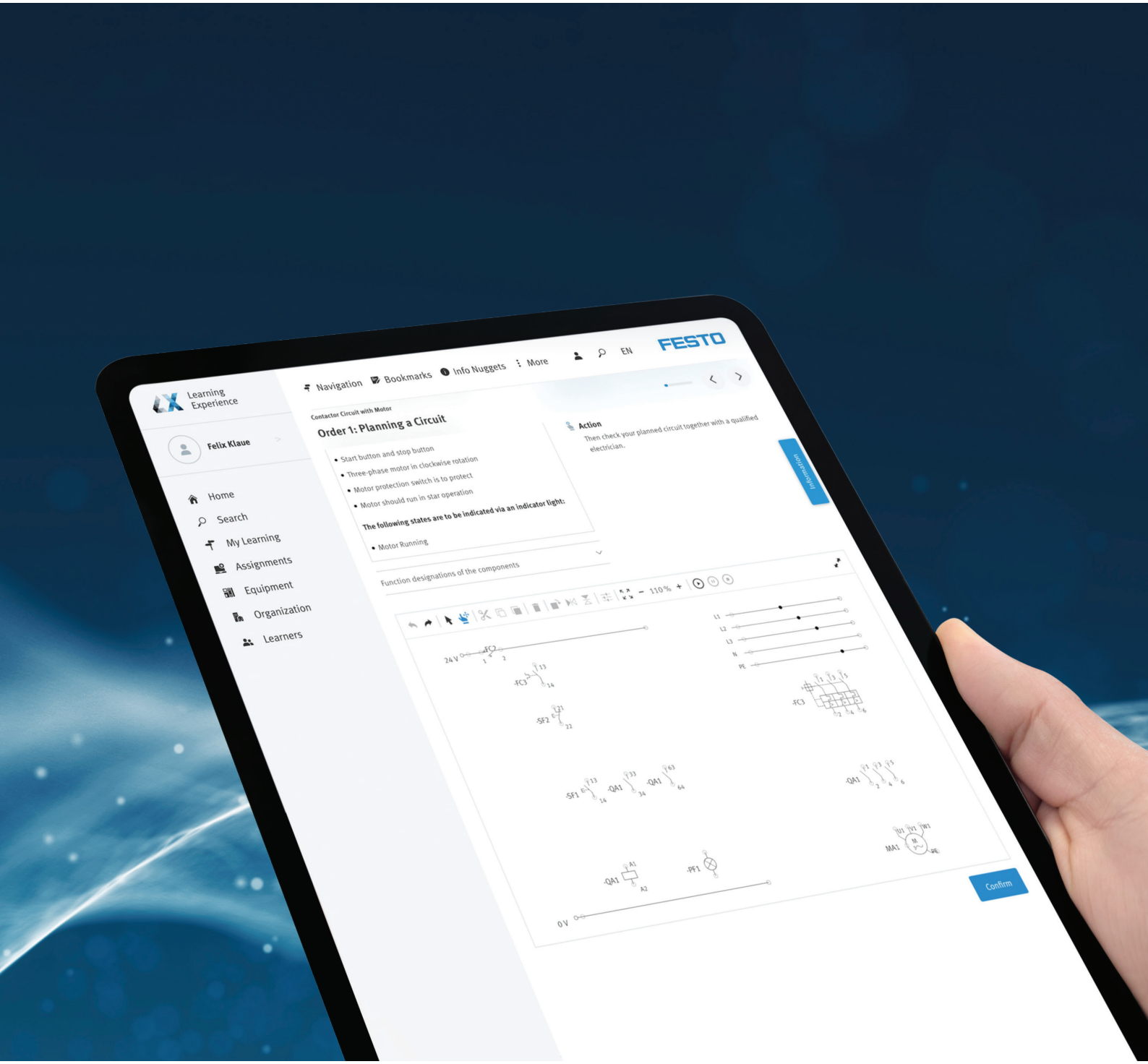
Through this seamless integration, everything happens in one place - courses, simulations, and evaluations are combined into a unique and immersive learning experience that connects theory with real practice.

Teachers can also use the LX Creator to design their own FluidSIM circuits and integrate them into customized learning nuggets, enabling fully personalized simulation-based training adapted to specific course objectives.

FluidSIM Web is continuously updated and accessible online, offering a modern environment for intuitive circuit design, component testing, and realistic system analysis — all inside the Festo LX ecosystem.



The FluidSIM symbol inside this catalog indicates that a simulation activity is available.


Learning Experience
Felix Klaue
Home
Search
My Learning
Assignments
Equipment
Organization
Learners
Navigation
Bookmarks
Info Nuggets
More
EN
FESTO
Contactor Circuit with Motor
Order 1: Planning a Circuit
Start button and stop button
Three-phase motor in clockwise rotation
Motor protection switch is to protect
Motor should run in star operation
The following states are to be indicated via an indicator light:
Motor Running
Action
Then check your planned circuit together with a qualified electrician.
Information
Function designations of the components
Confirm



Festo LX Course Overview

Courses 18

- Fluid Power 18
- Electricity and Electronics 32
- Factory Automation 64
- Industry 4.0 and IIoT 90
- Electric Power Technology 106
- Industrial Trades 150
- MetalWorking 194
- Renewable Energy 206
- Process Automation 218
- Building System Technology 242
- Organization and People 250
- STEM 260

Learning Paths 270

Curricula 464

Note:

This catalog provides an overview of our available courses.
The course library is continually expanding.
For the most current offerings, visit → **lx.festo.com**



Fluid Power

Harness the Force of Fluids

Unlock Fluid Power expertise! Explore pneumatic and hydraulic systems—from design and maintenance to expert troubleshooting across industries.


FESTO

Fluid Power

eLearning Courses

Pneumatic Fundamentals

Language: EN, DE, ES, FR, FI, DA, PT, IT, SV, TR, HU, PL, NL, HR, NO, RO
Learning Time: 45 min

Module 1 of the Pneumatic eLearning series. Learn the physical principles that govern the behavior of compressed air, as well as the basic variables of pneumatics.

Pneumatic Air Treatment

Language: EN, DE, ES, FR, FI, DA, PT, IT, SV, TR, HU, PL, NL, HR, NO, RO
Learning Time: 1 hour

Module 2 of the Pneumatic eLearning series. To guarantee the correct functioning of a pneumatic system, there are important factors in air treatment that need to be considered.

Pneumatic Actuators

Language: EN, DE, ES, FR, HR, RO, IT, NL, PL, SV, TR, HU, NO, DA, PT, FI
Learning Time: 1 hour

Module 3 of the Pneumatic eLearning series. Different actuators generate different types of movement. Learn more about pneumatic motion principles as well as linear and rotary actuators.

Pneumatic Valves

Language: EN, DE, ES, FR, IT, PL, RO, HU, DA, PT, FI, SV, NL, HR, TR, NO
Learning Time: 1 hour

Module 4 of the Pneumatic eLearning series. Pneumatic valves control the movement of the actuators and give them certain operating characteristics. Learn more about the types of valves and their functionality.

Basic Pneumatic Circuits

Language: EN, DE, ES, FR, HU, DA, TR, FI, PL, RO, HR, NO, IT, NL, SV, PT
Learning Time: 2 hours

Module 5 of the Pneumatic eLearning series. Learn how to develop a pneumatic system, from the selection of the components to the tools that facilitate the pneumatic circuit design.

Fluid Power

eLearning Courses

Pneumatic Valve Terminals New

Language: DE, EN, ES, FR
Learning Time: 45 min

Module 6 in the series of learning programs on industrial pneumatics. Valve terminals are highly appealing in industrial automation as they simplify complex installations and significantly reduce the number of pneumatic, electric, and mechanical connections. This offers numerous benefits to both manufacturers and users.

Electropneumatic Fundamentals

Language: EN, DE, ES, FR
Learning Time: 30 min

Module 1 of the Electropneumatic eLearning series. Learn the basic principles of electrical circuits, as well as the most important pneumatic variables.

Electropneumatic Components

Language: EN, DE, ES, FR
Learning Time: 1 hour

Module 2 of the Electropneumatic eLearning series. Each component of the electrical system controls the behavior of the pneumatic actuators. Find out more about their interaction.

Basic Electropneumatic Circuits

Language: EN, DE, ES, FR, PT
Learning Time: 2 hours

Module 3 of the Electropneumatic eLearning series. Learn how to develop an electropneumatic system, from the tools that facilitate the design, to the industrial applications of the relay.

Fluid Power

eLearning Courses

Hydraulic Fundamentals

Language: EN, DE, ES, FR, ZH
Learning Time: 45 min

Module 1 of the Hydraulic eLearning series. Learn the physical principles that govern the behavior of compressed fluids, as well as the basic variables of hydraulics.

Hydraulic Power Pack

Language: EN, DE, ES, FR
Learning Time: 9 hours

Module 2 of the Hydraulic eLearning series. To ensure the proper operation of a hydraulic system, there are important factors in the hydraulic fluid and the hydraulic power pack that must be taken into account.

Hydraulic Actuators

Language: EN, DE, ES, FR
Learning Time: 1 hour

Module 3 of the Hydraulics eLearning series. Different actuators generate different types of movement. Learn more about hydraulic motion principles as well as linear and rotary actuators.

Hydraulic Valves

Language: EN, DE, ES, FR
Learning Time: 1 hour

Module 4 of the Hydraulic eLearning series. Hydraulic valves control the movement of the actuators and give them certain operating characteristics. Learn more about the types of valves and their functionality.

Basic Hydraulic Circuits

Language: EN, DE, ES, FR
Learning Time: 1 hour

Module 5 of the Hydraulic eLearning series. Learn how to develop a hydraulic system, from the selection of the components to the tools that facilitate the hydraulic circuit design.

Fluid Power

eLearning Courses

Electrohydraulic Fundamentals

Language: EN, DE, ES, FR
Learning Time: 30 min

Module 1 of the Electrohydraulic eLearning series. Learn the basic principles of electrical circuits, as well as the most important hydraulic variables.

Electrohydraulic Components

Language: EN, DE, ES, FR
Learning Time: 1 hour

Module 2 of the Electrohydraulics eLearning series. Each component of the electrical system controls the behavior of the hydraulic actuators. Find out more about their interaction.

Basic Electrohydraulic Circuits

Language: EN, DE, ES, FR
Learning Time: 2 hours

Module 3 of the Electrohydraulic eLearning series. Learn how to develop an electrohydraulic system, from the tools that facilitate the design, to the industrial applications of the relay.

Load-Sensing Systems | Mobile Hydraulics

Language: EN, DE
Learning Time: 1 hour

The requirements for mobile machinery depend on numerous conditions. Learn about the theoretical fundamentals of Mobile Hydraulics and Load-Sensing Systems.

Fluid Power

eLab Courses

Basics of Pneumatics

Language: BG, CS, DE, EL, EN, ES, ET, FI, FR, HU, IT, LT, NL, PL, RO, SK, SL, TR, UK, ZH
Learning Time: 15 hours
Equipment: Equipment Set TP 101 Pneumatics, Basic Level
Learn the basics of pneumatic control technology and set up simple pneumatic controllers using the equipment set of the TP 101 training package.

Basics of Electropneumatics

Language: EN, DE, ES, FR, ZH
Learning Time: 19 hours
Equipment: Equipment Set TP 201 Electropneumatics, Basic Level
Learn the basics of electropneumatic control technology and set up simple electropneumatic controllers using the equipment set of the TP 201 training package.

Electropneumatics Advanced Level New

Language: DE, EN, ES, FR
Learning Time: 14 hours
Equipment: Equipment Set TP 202 Electropneumatics Advanced Level
Expand your knowledge of electropneumatic control technology and build extensive combinatorial circuits with input and output signal connections, as well as program controllers using the equipment set of the TP 202 training package. You will learn to use valve terminals in accordance with specified requirements.

Basics of PLC Programming, (S7) on the TP 203 New

Language: EN, DE, ES, FR
Learning Time: 26 hours
Equipment: Equipment Set TP 203 PLC Integration in Pneumatic Systems
Learn the basics of programmable control technology and set up simple electropneumatic circuits using the equipment set of the TP 203 training package that you can put into operation with a PLC.

Basics of Hydraulics

Language: EN, DE, FI, FR
Learning Time: 20 hours
Equipment: Equipment Set TP 601 Electrohydraulics, Basic Level
Learn the basics of hydraulic control technology, the physical principles of hydraulics and the function and use of hydraulic components.

Fluid Power

eLab Courses

Basics of Electrohydraulics

Language: EN, DE, ES, FR
Learning Time: 16 hours
Equipment: Equipment Set TP 601 Electrohydraulics, Basic Level

Learn the basics of electrohydraulic control technology and set up simple electrohydraulic controllers using the equipment set of the TP 601 training package.

Digitalization in Hydraulics

Language: EN, DE, ES, FR
Learning Time: 9 hours
Equipment: Equipment Set TP 660 Digitalization in Hydraulics

This course is about digitalization in hydraulics. It aims to introduce digitalization in hydraulics, but also to improve your current knowledge level of hydraulics including circuits, proportional controls and maintenance.

Pneumatics Basic Level – TP 101 America

Language: EN
Learning Time: 11 hours
Equipment: Equipment Set TP 101 America Basic Pneumatics Training

Covers the principles of pneumatics and its controlled application using TP 101 America.

Electropneumatics Basic level – TP 201 America

Language: EN
Learning Time: 19 hours
Equipment: Equipment Set TP 201 America Electropneumatics Basic level

Covers the principles of electropneumatics and its controlled application using TP 201 America.

Hydraulics Basic Level – TP 501 America

Language: EN
Learning Time: 10 hours
Equipment: Equipment Set TP 501 America Hydraulics Basic Level

Covers the principles of hydraulics and its controlled application using TP 501 America.

Fluid Power

eLab Courses

Electrohydraulics Basic Level – TP 601 America

Language: EN
Learning Time: 13 hours
Equipment: Equipment Set TP 601 America Hydraulics Basic Level
Covers the principles of electrohydraulics and its controlled application using TP 601 America.



Fluid Power

Evaluations

Basics of Pneumatics

Language: EN, DE, ES, FR

Test your knowledge learned in the Basics of Pneumatics course with the TP 101. Complete 20 interactive tasks on the structure and function of pneumatic components and controls.

Basics of Electropneumatics

Language: EN, DE, ES, FR

Check your knowledge learned in the Basics of Electropneumatics course with the TP 201. Complete 20 interactive questions on the design and function of electropneumatic components and controls.

Basics of Hydraulics

Language: EN, DE, ES, FR

Check your knowledge learned in the Basics of Hydraulics course with the TP 501. Complete 20 interactive questions on the design and function of hydraulic components and controls.

Basics of Electrohydraulics

Language: EN, DE, ES, FR

Check your knowledge learned in the Basics of Electrohydraulics course with the TP 601. Complete 20 interactive questions on the design and function of electrohydraulic components and controls.

Pneumatics Basic Level – TP 101 America New

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Pneumatics Basic Level.

Fluid Power

Evaluations

Electropneumatics Basic level – TP 201 America New

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Electropneumatics Basic level.

Hydraulics Basic Level – TP 501 America New

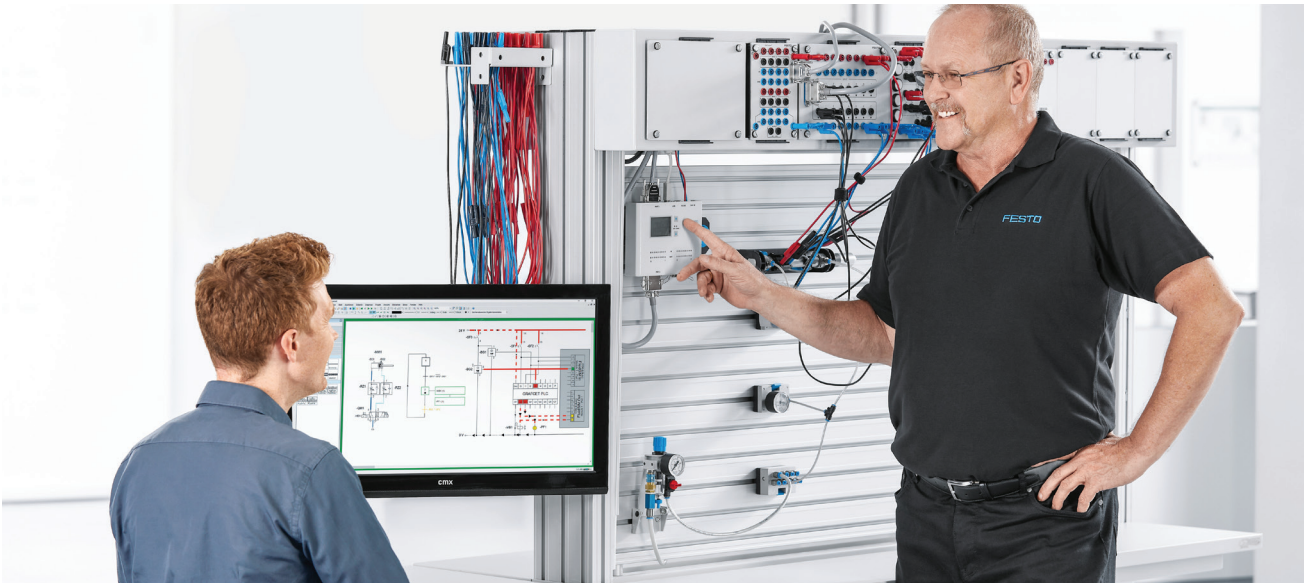
Language: EN

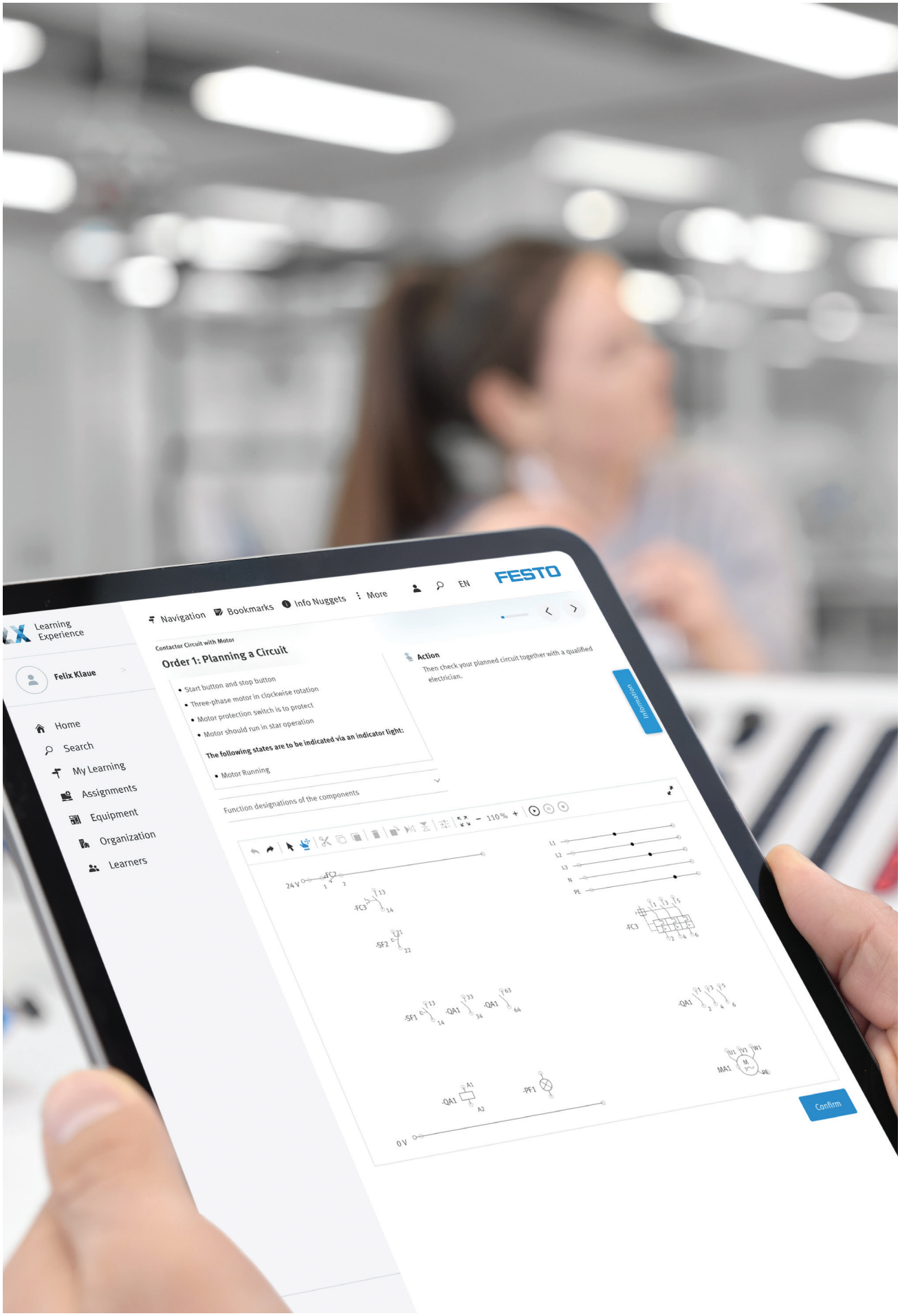
This evaluation gives you the opportunity to measure your knowledge on the following topic: Hydraulics Basic Level.

Electrohydraulics Basic Level – TP 601 America New

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Electrohydraulics Basic Level.




Learning Experience
Felix Klaue
Home
Search
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Assignments
Equipment
Organization
Learners
Navigation
Bookmarks
Info Nuggets
More
EN
FESTO
Contactor Circuit with Motor
Order 1: Planning a Circuit
Start button and stop button
Three-phase motor in clockwise rotation
Motor protection switch is to protect
Motor should run in star operation
The following states are to be indicated via an indicator light:
Motor Running
Action
Then check your planned circuit together with a qualified electrician.
Information
Function designations of the components
110 %
24 V
0 V
Confirm

Fluid Power

Videos

Pneumatic Final Speed Variation

Language: EN, ES
Learning Time: 15 min

This video shows how to vary the speed of a pneumatic linear drive unit.

Pneumatic Interlocking Systems

Language: EN, ES
Learning Time: 15 min

In this video you see the pneumatic interlocking circuit with priority stop.

Different Pressure and Measuring Devices - Under Pressure

Language: EN
Learning Time: 15 min

Pressure data is always related to a reference pressure, which is generally atmospheric pressure. This video shows the difference between the different measuring devices manometer and vacumeter and the different pressures in our daily lives.

Pressure Relief Valve in Hydraulics

Language: EN, ES
Learning Time:15 min

In this video you see how to control the pressure so that it does not exceed the maximum value supported by the hydraulic power unit, as well as the working pressure in the system.

Power Hydraulics

Language: EN, ES
Learning Time: 15 min

In this video you see power hydraulics as a very accepted option to automate different production processes in a simple way.





Electricity and Electronics

Empowering Industries with Electricity

Unlock the potential of Electricity and Electronics. From circuits to robotics, become a driver for innovation in industrial applications.



Electricity and Electronics

eLearning Courses

Electrics 1 - Circuits, Conductivity, Ohm's Law

Language: DE, EN, ES, ET, FI, FR, IT, LT, SV, ZH
Learning Time: 4 hours

This course covers the basics of electrical engineering including closed circuits, electrical conductivity, Ohm's Law, voltage supplies and resistors.

Electrics 2 - Electric Charge, Capacitors, Coils

Language: EN, DE, ES, FR, SV, ET, FI, ZH, LT
Learning Time: 3 hours

This course covers further topics in electrical engineering including electric charge, capacitors and coils.

Electronics 1 - Semiconductors, Diodes, Transistors

Language: DE, EN, ES, ET, FI, FR, IT, LT, ZH
Learning Time: 5 hours

This course covers the basics of electronics including semiconductor technology, diodes, bipolar transistors and field-effect transistors.

Electronics 2 - Thyristors, Signal Types, Integrated Circuits

Language: EN, DE, ES, FR, ET, FI, LT, ZH
Learning Time: 3 hours

This course covers further topics in electronics including signal types, integrated circuits, operational amplifiers, frequencies and filters.

Electrical Protective Measures

Language: EN, DE, ES, FR, LT, ZH
Learning Time: 4 hours

This course provides an introduction to the complex subject of safety measures. It explains what electrical safety measures are and how they are classified.


Learning Experience
Daniel García Salas
Home
Search
My Learning
Assignments
Equipment
Organization
Learners
Admin
Insights
Manage Licenses
Frequently Asked Questions
Give us Feedback
Imprint and Data Privacy
Terms of Use
Navigation
Bookmarks
Spoken text
Sound
PDF
Settings
More
EN
FESTO
Electrical Drives 1
Current Supply
Direct current
Single-phase
Three-phase

Electricity and Electronics

eLab Courses

DC Fundamentals

Language: EN, ES, FR
Learning Time: 33 hours
Equipment: DC Fundamentals FACET Board
Covers the fundamentals of dc circuits and components using the FACET system.

DC Network Theorems

Language: EN, ES
Learning Time: 20 hours
Equipment: DC Network Theorems FACET Board
Covers the fundamental dc network theorems using the FACET system.

AC Fundamentals 1

Language: EN, ES, FR
Learning Time: 15 hours
Equipment: AC 1 Fundamentals FACET Board
Covers the fundamentals of ac circuits and components using the FACET system.

AC Fundamentals 2

Language: EN, ES, FR
Learning Time: 13 hours
Equipment: AC 2 Fundamentals FACET Board
Covers additional fundamental principles of ac circuits and components using the FACET system.

Semiconductor Fundamentals

Language: EN, ES, FR
Learning Time: 19 hours
Equipment: Semiconductor Devices FACET Board
Covers the fundamentals of semiconductor circuits and components using the FACET system.


FESTO
Procedure steps
FESTO

Electricity and Electronics

eLab Courses

Transistor Amplifier Circuits

Language: EN, ES, FR
Learning Time: 21 hours
Equipment: Transistor Amplifier Circuits FACET Board
Covers the fundamentals of transistor amplifier circuits using the FACET system.

Transistor Power Amplifiers

Language: EN, ES, FR
Learning Time: 16 hours
Equipment: Transistor Power Amplifiers FACET Board
Covers the fundamentals of transistor power amplifiers using the FACET system.

Transistor Feedback Circuits

Language: EN, ES
Learning Time: 13 hours
Equipment: Transistor Feedback Circuits FACET Board
Covers the fundamentals of transistor feedback circuits using the FACET system.

Power Supply Regulators

Language: EN, ES, FR
Learning Time: 15 hours
Equipment: Power Supply Regulation Circuits FACET Board
Covers the fundamentals of power supply regulators using the FACET system.

FET Fundamentals

Language: EN, ES, FR
Learning Time: 15 hours
Equipment: FET Fundamentals FACET Board
Covers the fundamentals of FET using the FACET system.

Electricity and Electronics

eLab Courses

Thyristor and Power Control Circuits

Language: EN, ES, FR
Learning Time: 13 hours
Equipment: Thyristors and Power Control Circuits FACET Board
Covers the fundamentals of thyristor and power control circuits using the FACET system.

Operational Amplifier Fundamentals

Language: EN, ES, FR
Learning Time: 17 hours
Equipment: Operational Amplifier Fundamentals FACET Board
Covers the fundamentals of operational amplifier using the FACET system.

Operational Amplifier Applications

Language: EN, ES, FR
Learning Time: 13 hours
Equipment: Operational Amplifier Applications FACET Board
Covers the main applications of operational amplifiers using the FACET system.

Digital Logic Fundamentals

Language: EN, ES
Learning Time: 23 hours
Equipment: Digital Logic Fundamentals FACET Board
Covers the fundamentals of digital logic using the FACET system.

Digital Logic Fundamentals SMT

Language: EN, ES, FR
Learning Time: 26 hours
Equipment: Digital Logic Fundamentals FACET Board
Covers the fundamentals of digital logic with surface-mount technology (SMT) using the FACET system.

Electricity and Electronics

eLab Courses

Digital Circuit Fundamentals 1

Language: EN, ES, FR
Learning Time: 13 hours
Equipment: Digital Circuit Fundamentals 1 FACET Board
Covers the fundamentals of digital circuits using the FACET system.

Digital Circuit Fundamentals 2

Language: EN, ES, FR
Learning Time: 11 hours
Equipment: Digital Circuit Fundamentals 2 FACET Board
Covers additional fundamental principles of digital circuits using the FACET system.

32-Bit Microprocessor

Language: EN, ES
Learning Time: 59 hours
Equipment: 32-Bit Microprocessor FACET Board
Covers the fundamentals of 32-bit microprocessors using the FACET system.

Analog Communications

Language: EN, ES, FR
Learning Time: 24 hours
Equipment: Analog Communications FACET Board
Covers the fundamentals of analog communications using the FACET system.

Transducer Fundamentals

Language: EN, ES, FR
Learning Time: 24 hours
Equipment: Transducer Fundamentals FACET Board
Covers the fundamentals of transducers using the FACET system.

Electricity and Electronics

eLab Courses

Magnetism and Electromagnetism

Language: EN, ES
Learning Time: 9 hours
Equipment: Magnetism and Electromagnetism FACET Board
Covers the fundamentals of magnetism and electromagnetism using the FACET system.

Digital Communications 1

Language: EN, ES
Learning Time: 31 hours
Equipment: Digital Communications 1 FACET Board
Covers the fundamentals of digital communications using the FACET system.

Digital Communications 2

Language: EN, ES
Learning Time: 37 hours
Equipment: Digital Communications 2 FACET Board
Covers additional fundamental principles of digital communications using the FACET system.

Motors, Generators, and Controls

Language: EN, ES, FR
Learning Time: 18 hours
Equipment: Generators and Controls FACET Board
Covers the fundamentals of motors, generators, and controls using the FACET system.

Motors, Generators, and Controls (DC Motor Rev. A)

Language: EN, ES, FR
Learning Time: 18 hours
Equipment: Generators and Controls FACET Board
Covers the fundamentals of motors, generators, and controls using the FACET system. This course is for users with the Rev. A of the Motors, Generators and Controls module.

Electricity and Electronics

eLab Courses

Fiber Optic Communications

Language: EN, ES
Learning Time: 35 hours
Equipment: Fiber Optic Communications FACET Board
Covers the fundamentals of fiber optic communications using the FACET system.

Power Transistors and GTO Thyristors

Language: EN, ES, FR
Learning Time: 21 hours
Equipment: Power Transistors and GTO Thyristor FACET Board
Covers the fundamentals of power transistors and GTO thyristors using the FACET system.

Communications Transmission Lines

Language: EN, ES
Learning Time: 22 hours
Equipment: Communications Transmission Lines FACET Board
Covers the fundamentals of communications transmission lines using the FACET system.

Quadrature Phase-Shift Keying (QPSK)

Language: EN, ES
Learning Time: 7 hours
Equipment: QPSK/OQPSK/DPSK FACET Board
Covers the fundamentals of quadrature phase-shift keying (QPSK) using the FACET system.

Microcontroller System Development

Language: EN, ES
Learning Time: 5 hours
Equipment: Microcontroller System Development
Covers the fundamentals of microcontroller system development using the FACET system.

Electricity and Electronics

eLab Courses

Digital Signal Processor

Language: EN, ES
Learning Time: 23 hours
Equipment: Digital Signal Processor FACET Board
Covers the fundamentals of digital signal processors using the FACET system.



Electricity and Electronics

eLab Courses

Fundamentals of Direct Current Technology

Language: DE, EN, FR, IT
Learning Time: 20 hours
Equipment: Equipment set TP 1011 Fundamentals of electrical engineering/electronics
Learn the basics of direct current technology, create simple electrical circuits, and measure electrical values.

Fundamentals of Alternating Current Technology

Language: DE, EN, FR, IT
Learning Time: 19 hours
Equipment: Equipment set TP 1011 Fundamentals of electrical engineering/electronics
Learn the basics of alternating current technology, create simple electrical circuits, and measure electrical values.

Fundamentals of Semiconductors

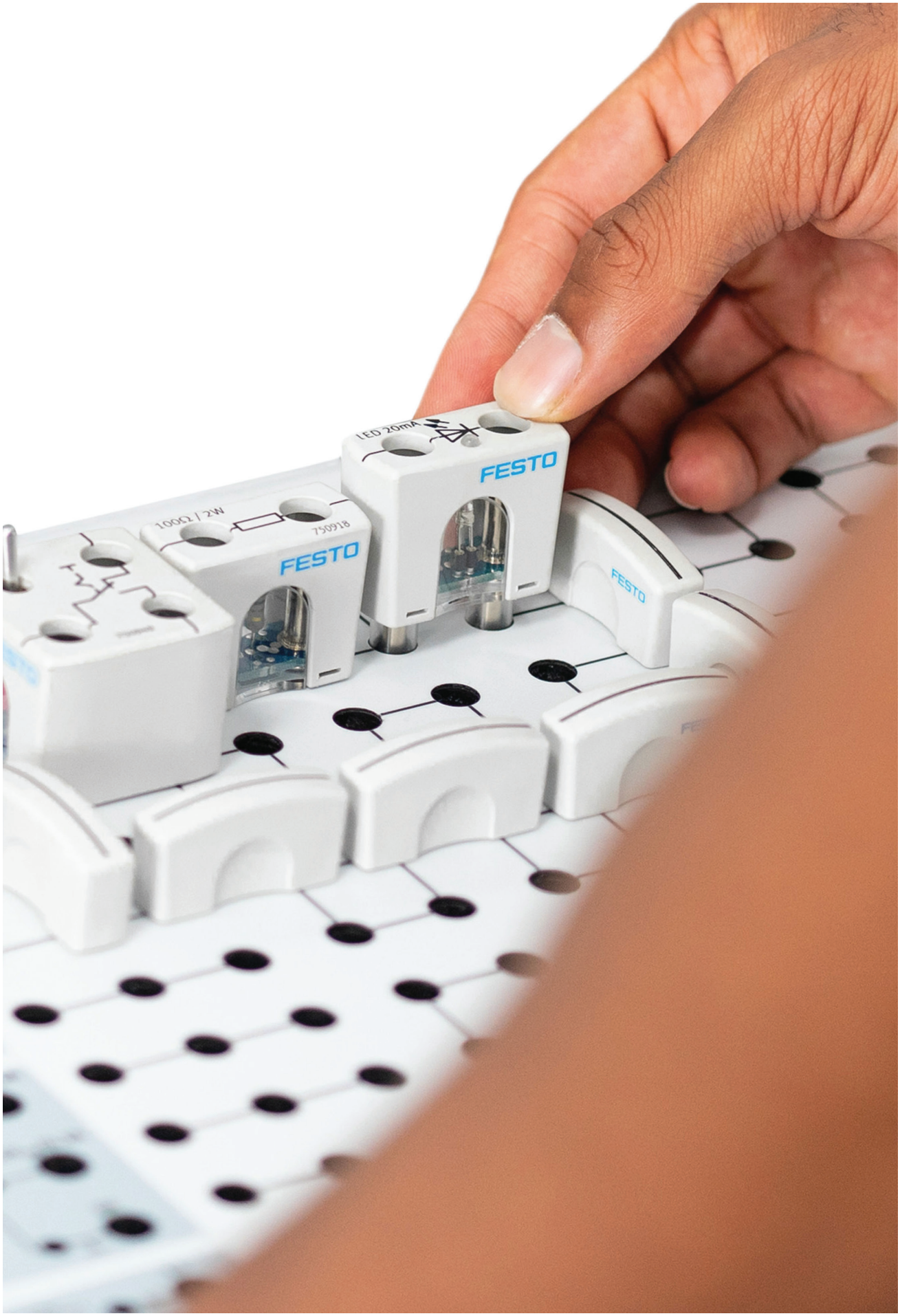
Language: EN, DE
Learning Time: 13 hours
Equipment: Equipment set TP 1011 Fundamentals of electrical engineering/electronics
This course covers the structure and function of the circuit components and the behavior of the components in basic circuits and simple application circuits.

Basic Electronics Circuits

Language: EN, DE
Learning Time: 31 hours
Equipment: Equipment set TP 1011 Fundamentals of electrical engineering/electronics
Create simple electronics circuits, discover the most important applications for electronic elements and perform the needed measurements.

Level Control System New

Language: DE, EN
Learning Time: 30 min.
Equipment: Equipment set TP 1013 Basic principles of control technology
The level control system was designed as a supplement to TP 1013 and its course Basic Principles of Closed-Loop Control Technology.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Electricity and Electronics

eLab Courses

Light and Temperature Control System New

Language: DE, EN
Learning Time: 30 min.
Equipment: Equipment set TP 1013 Basic principles of control technology
The Light-Temperature Control was designed as a supplement to the TP1013 ant its course “Basic Principles of Closed-Loop Control Technology”.

Linear Position Control System New

Language: DE, EN
Learning Time: 1 hour
Equipment: Equipment set TP 1013 Basic principles of control technology
The Position Controlled System was designed as an addition to equipment set TP 1013 and its course “Basic Principles of Closed-Loop Control Technology”.

Motor-Speedometer Unit New

Language: DE, EN
Learning Time: 1 hour
Equipment: Equipment set TP 1013 Basic principles of control technology
The Speed-Controlled System is designed as companion to training package TP 1013 and its course “Basic Principles of Closed-Loop Control Technology”.

ESD Protection in the Semiconductor Industry New

Language: DE, EN
Learning Time: 5 hour

In this course, you will become aware of the importance of ESD protection in the industry and learn which common measures are used to prevent damage to the product caused by electrostatic charge and discharge.


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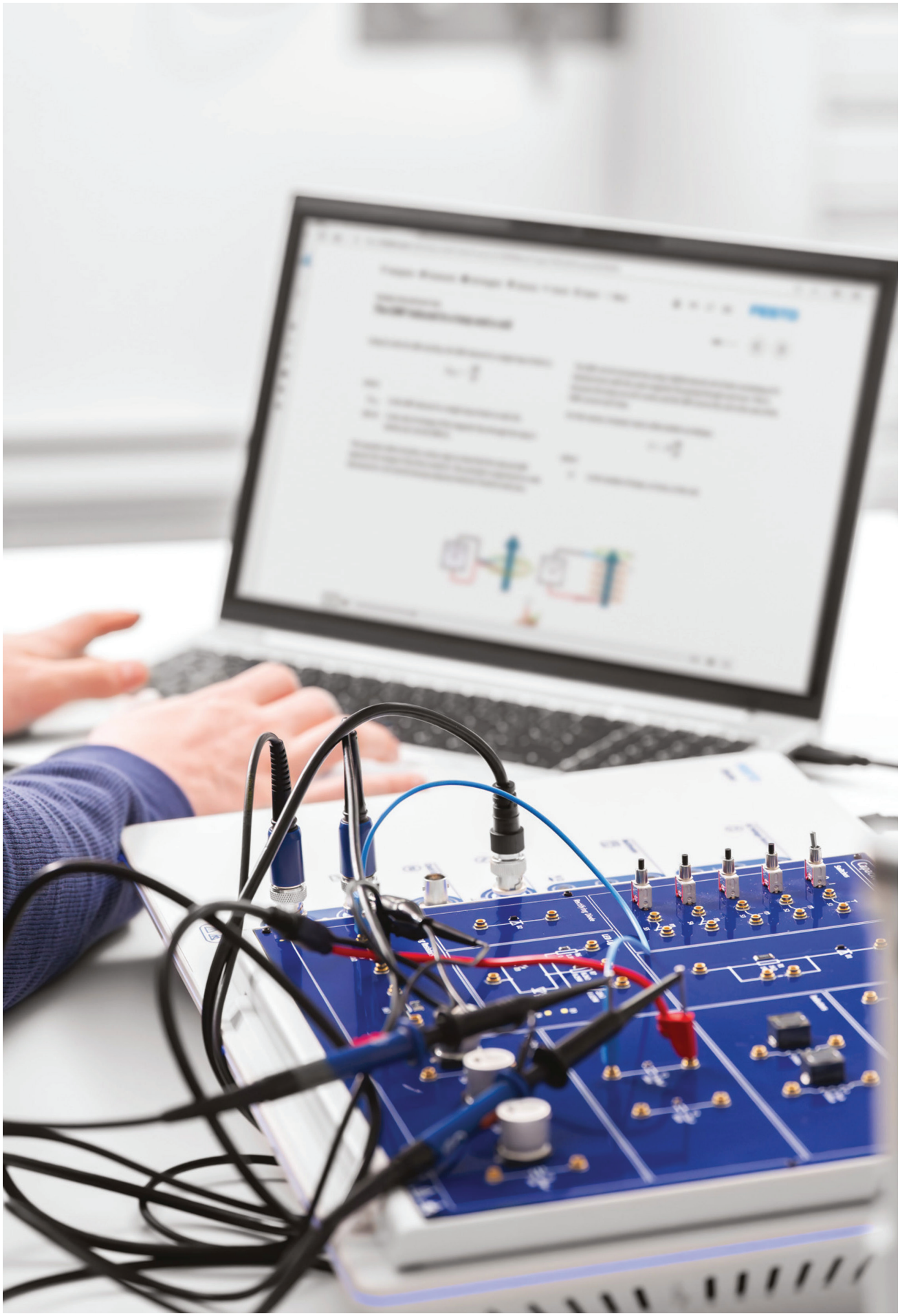


Electricity and Electronics

eLab Courses

Magnetism and Electromagnetism New

Language: DE, EN
Learning Time: 9 hours
Equipment: Electeo Base Unit, Electeo Learning Board – Magnetism and Electromagnetism
Teaches the fundamentals of magnetism and electromagnetism. Introduces the operation of the following basic electromagnetic devices: the electromagnet, the linear and rotary solenoid actuators, and the electromechanical relay.

Diodes and Rectifier Circuits New

Language: DE, EN
Learning Time: 8 hours
Equipment: Electeo Base Unit, Electeo Learning Board – Diodes and Rectifiers
Teaches the fundamentals of diodes and rectifier circuits.

BJT Fundamentals and Basic Circuits New

Language: EN
Learning Time: 14 hours
Equipment: Electeo Base Unit, Electeo Learning Board – BJT Fundamentals and Basic Circuits

Teaches the fundamentals (construction, packages, symbol, basic characteristics, etc.) of the bipolar junction transistor (BJT). Shows how to correctly bias a BJT so that it can operate as a current-control device. Also shows how to use a BJT as an electronic switch. Covers the operation of BJT circuits used for voltage amplification (common-emitter amplifier) as well as for current amplification (common-collector amplifier). Shows how to troubleshoot BJT circuits using a structured approach.

Operational Amplifier Fundamentals New

Language: EN
Learning Time: 17 hours
Equipment: Electeo Base Unit, Electeo Learning Board – Operational Amplifier Fundamentals

Covers the fundamentals of operational amplifiers (packages, symbol, basic characteristics), including ideal vs non-ideal behaviour and operation with and without feedback. Demonstrates the use of op amps as comparators (with and without hysteresis), inverting/non-inverting amplifiers, and summing amplifiers. Includes a dual-level detector project and introduces systematic troubleshooting techniques for op amp circuits.

Electricity and Electronics

eLab Courses

DC Fundamentals New

Language: DE,EN
Learning Time: 16 hours
Equipment: Electeo Base Unit, Electeo Learning Board – AC/DC Fundamentals
Teaches the fundamentals of electricity and how to calculate voltage, current, resistance, and power in dc circuits. Introduces basic electric components such as resistors, potentiometers, switches, light-emitting diodes (LEDs), thermistors, and varistors. Also introduces the use of basic instruments such as the variable-voltage dc source and the multimeter.

AC Fundamentals New

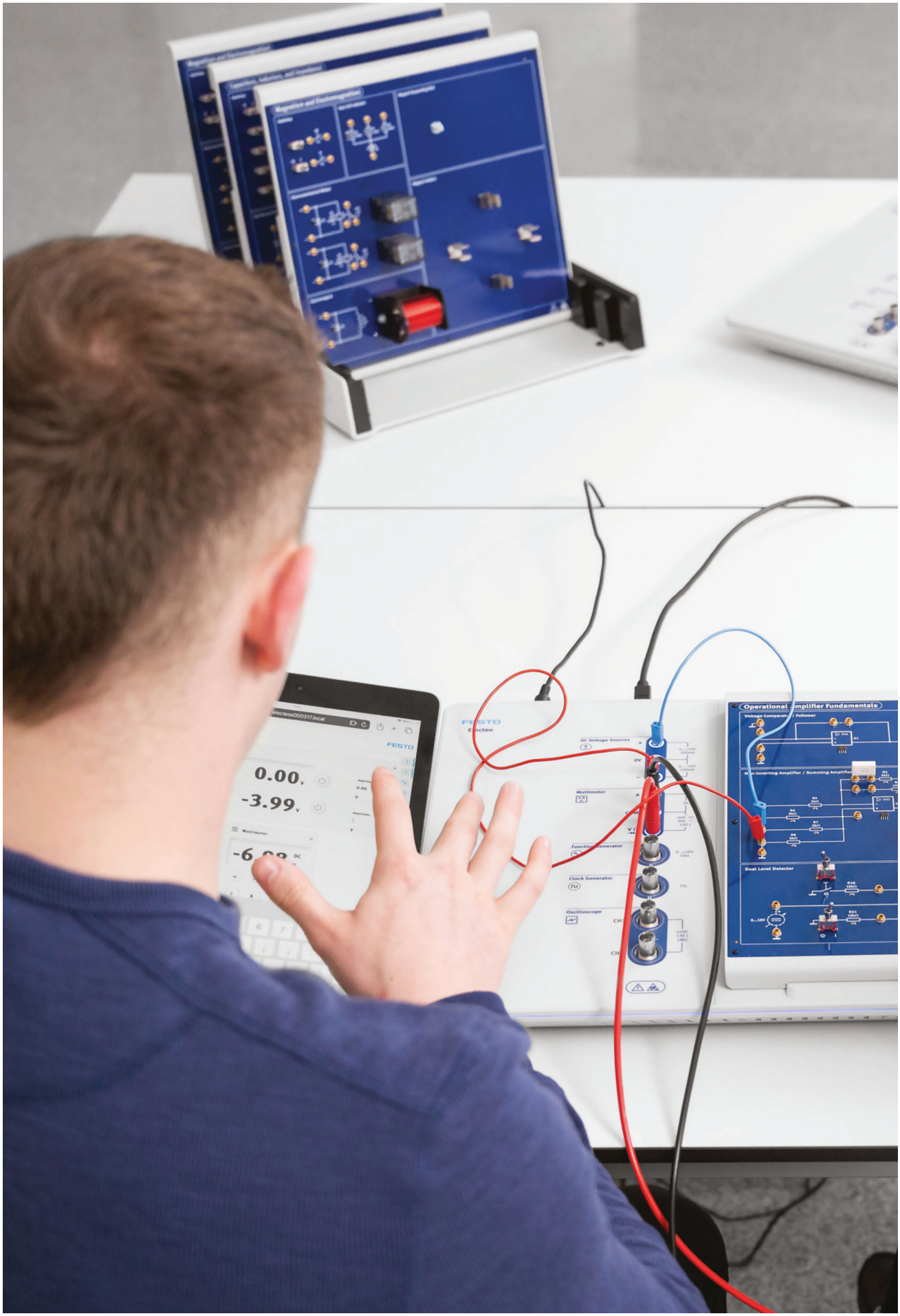
Language: DE, EN
Learning Time: 8 hours
Equipment: Electeo Base Unit, Electeo Learning Board – AC/DC Fundamentals
Teaches the fundamentals of alternating current (waveform, amplitude, period, frequency, etc.). Also teaches more advanced concepts such as the phase angle of the sine wave, the phase shift between ac waveforms, the effective value of voltage or current, etc. Shows how to solve resistive ac circuits to find the values of voltage, current, resistance, and power. Introduces the use of common instruments such as the function generator and the oscilloscope.

Capacitors and Inductors New

Language: DE, EN
Learning Time: 10 hours
Equipment: Electeo Base Unit, Electeo Learning Board – Capacitors, Inductors, and Impedance
Teaches the fundamentals of capacitors and inductors in dc and ac circuits.

Impedance New

Language: DE, EN
Learning Time: 4 hours
Equipment: Electeo Base Unit, Electeo Learning Board – Capacitors, Inductors, and Impedance
Teaches the fundamentals of impedance in dc and ac circuits.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Operational Amplifier Fundamentals
Dual Level Detector

Electricity and Electronics

eLab Courses



Commissioning the SkillsConveyor (unmounted)

Language: DE, EN, ES, FR
Learning Time: 20 hour
Equipment: SkillsConveyor (Kit), SkillsConveyor (Mounted)
In this course, you will get to know the SkillsConveyor, assemble it mechanically and electrically and then put it into operation.

Commissioning of the SkillsConveyor (mounted)

Language: DE, EN, ES, FR
Learning Time: 7 hours
Equipment: SkillsConveyor (Mounted)
In this course you will get to know the SkillsConveyor and commission it.

Electricity and Electronics

eLab Courses

Basics of Motor Control with SkillsConveyor and Training Package 1221 New

Language: DE, EN, ES, FR
Learning Time: 13 hours
Equipment: SkillsConveyor and Equipment Set TP 1211 Basic principles of circuits with contacts
In this course, you will learn the basics of wiring and controlling an AC motor on the SkillsConveyor and TP 1221 – Basic principles of motor control.

Wiring and Control of an AC Motor with SkillsConveyor and TP New

Language: DE, EN, ES, FR
Learning Time: 19 hours
Equipment: SkillsConveyor (Mounted) & Equipment set TP 1211: Basic principles of circuits with contacts
In this course you will learn the basics of wiring and controlling an AC motor on the SkillsConveyor and TP 1211 – Basic principles of circuits with contacts.

Wiring and Control of an AC Motor with SkillsConveyor and Control Cabinet

Language: DE, EN, ES, FR
Learning Time: 31 hours
Equipment: SkillsConveyor (Mounted) & Control Cabinet for Mechatronic Technicians and Electricians for Automation
In this course, you will learn the basics of wiring and controlling an AC motor on the SkillsConveyor and control cabinet.

Hard-Wired Programmed Control with SkillsConveyor and TP New

Language: DE, EN, ES, FR
Learning Time: 15 hours
Equipment: SkillsConveyor and Equipment Set TP 1211 Basic principles of circuits with contacts
In this course, you will learn and apply the basics of hard-wired programmed controllers with the SkillsConveyor and the TP 1211 training package (Basic principles of circuits with contacts).

Hard-Wired Programmed Control with SkillsConveyor and Control Cabinet

Language: DE, EN, ES, FR
Learning Time: 23 hours
Equipment: SkillsConveyor (Mounted) & Control Cabinet for Mechatronic Technicians and Electricians for Automation
In this course, you will learn and apply the basics of hard-wired programmed controllers with the SkillsConveyor and the Control Cabinet.

Electricity and Electronics

Evaluations

DC Fundamentals

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: DC Fundamentals.

DC Network Theorems

Language: EN, ES
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: DC Network Theorems.

AC Fundamentals 1

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: AC Fundamentals 1.

AC Fundamentals 2

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: AC Fundamentals 2.

Semiconductor Fundamentals

Language: EN, ES
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Semiconductor Fundamentals.

Electricity and Electronics

Evaluations

Transistor Amplifier Circuits

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Transistor Amplifier Circuits.

Transistor Power Amplifiers

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Transistor Power Amplifiers.

Transistor Feedback Circuits

Language: EN, ES
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Transistor Feedback Circuits.

FET Fundamentals

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: FET Fundamentals.

Thyristor and Power Control Circuits

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Thyristor and Power Control Circuits.

Electricity and Electronics

Evaluations

Operational Amplifier Fundamentals

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Operational Amplifier Fundamentals.

Operational Amplifier Applications

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Operational Amplifier Applications.

Digital Logic Fundamentals

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Digital Logic Fundamentals.

Digital Logic Fundamentals SMT

Language: EN, ES
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Digital Logic Fundamentals SMT.

Digital Circuit Fundamentals 1

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Digital Circuit Fundamentals 1.

Electricity and Electronics

Evaluations

Digital Circuit Fundamentals 2

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Digital Circuit Fundamentals 2.

32-Bit Microprocessor

Language: EN, ES
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: 32-Bit Microprocessor.

Analog Communications

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Analog Communications.

Transducer Fundamentals

Language: EN, ES,FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Transducer Fundamentals.

Magnetism and Electromagnetism

Language: EN, ES
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Magnetism and Electromagnetism.

Electricity and Electronics

Evaluations

Digital Communications 1

Language: EN, ES
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Digital Communications 1.

Digital Communications 2

Language: EN, ES
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Digital Communications 2.

Motors, Generators, and Controls

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Motors, Generators, and Controls.

Motors, Generators, and Controls (DC Motor Rev. A)

Language: EN, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Motors, Generators, and Controls (DC Motor Rev. A).

Fiber Optic Communications

Language: EN, ES
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Fiber Optic Communications.

Electricity and Electronics

Evaluations

Power Transistors and GTO Thyristors

Language: EN, ES, FR
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Power Transistors and GTO Thyristors.

Communications Transmission Lines

Language: EN, ES
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Communications Transmission Lines.

Quadrature Phase-Shift Keying (QPSK)

Language: EN, ES
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Quadrature Phase-Shift Keying (QPSK).

Microcontroller System Development

Language: EN, ES
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Microcontroller System Development.

Digital Signal Processor

Language: EN, ES
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Digital Signal Processor.

Electricity and Electronics

Evaluations

Power Supply Regulators

Language: EN, DE
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Power Supply Regulators

DC Fundamentals New

Language: EN, DE
Equipment: Electeo

This evaluation gives you the opportunity to measure your knowledge on the following topic: DC Fundamentals

AC Fundamentals New

Language: EN, DE
Equipment: Electeo

This evaluation gives you the opportunity to measure your knowledge on the following topic: AC Fundamentals

Capacitors and Inductors New

Language: EN, DE
Equipment: Electeo

This evaluation gives you the opportunity to measure your knowledge on the following topic: Capacitors and Inductors

Impedance New

Language: EN, DE
Equipment: Electeo

This evaluation gives you the opportunity to measure your knowledge on the following topic: Impedance

Electricity and Electronics

Evaluations

Magnetism and Electromagnetism New

Language: EN, DE
Equipment: Electeo

This evaluation gives you the opportunity to measure your knowledge on the following topic: Magnetism and Electromagnetism

Diodes and Rectifier Circuits New

Language: EN
Equipment: Electeo

This evaluation gives you the opportunity to measure your knowledge on the following topic: Diodes and Rectifier Circuits

BJT Fundamentals and Basic Circuits New

Language: EN
Equipment: Electeo

This evaluation gives you the opportunity to measure your knowledge on the following topic: BJT Fundamentals and Basic Circuits

Basics of Electrical Engineering

Language: DE, EN, ES, FR
Equipment: SkillsConveyor

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of Electrical Engineering.

Electricity and Electronics

Videos

Needle-nose Pliers - How Tool New

Language: EN, DE, FR
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about needle-nose pliers.

Locking Pliers - How Tool New

Language: EN, DE, FR
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about Locking Pliers.

Slip Joint Pliers - How Tool New

Language: EN, ES, FR
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about Slip Joint pliers.

Crimping Tool - How Tool

Language: EN, DE
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about a crimping plier.

Insulation-Stripping Plier - How Tool

Language: EN, DE
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about an insulation-stripping plier.

Electricity and Electronics

Videos

Soldering - How Tool New

Language: EN, DE
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about soldering.

Measurement of Electronic Components with a Multimeter - How Tool New

Language: EN, DE
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about the multimeter and measuring electronic components of a circuit with a multimeter.

Measurement of a Circuit with a Multimeter - How Tool New

Language: EN, DE
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about the multimeter and the measurement of a circuit with a multimeter.

Oscilloscope - How Tool New

Language: EN, DE
Learning Time: 15 minutes

The video series “How Tool” describes different manufacturing processes as well as tools and their handling. This video is about the oscilloscope.

Explained in 5 Minutes - Electrostatic Charge and Discharge New

Language: EN, ES
Learning Time: 15 minutes

Electrostatic charges can cause numerous problems in production. In this video you will learn how to avoid them effectively.



Factory Automation

Smarter, Faster, and More Sustainable Production

Shape the world with factory automation expertise. Dive into robotics, HMI, and seamless communication between devices. Discover how goods and services are produced.



Factory Automation

eLearning Courses

Sensors in Pneumatics

Language: EN, DE, ES, FR, ZH, LT, FI, ET, RU
Learning Time: 2 hours

This course deals with the sensors used to detect end position on cylinders and with pressure and flow sensors in pneumatic systems.

Sensors for Object Sensing

Language: EN, DE, ES, FR, ZH, FI, LT, ET
Learning Time: 2 hours

This course deals in detail with the sensors used to detect objects in automated systems.

LOGO! Training

Language: EN, DE, ES, FR, ZH
Learning Time: 2 hours

This course provides an introduction to the logic functions of LOGO! including technical functions, the design, control, and function of a minicontroller as well as areas of application.

PLC Programming

Language: EN, DE, ES, FR, SV, LT
Learning Time: 4 hours

Programmable logic controllers play a central role in automation. These devices are used to control machines and systems. This course offers an ideal introduction to IEC-compliant programming.

GRAFCET

Language: EN, DE, ES, FR, ZH, LT
Learning Time: 3 hours

Good documentation is a prerequisite for the quick construction and smooth commissioning of a system. GRAFCET can describe what the function chart has previously been unable to represent.

Factory Automation

eLearning Courses

Open and Closed Loop Control

Language: EN, DE, ES, FR, ZH, LT
Learning Time: 1 hour

This course uses practical examples to show the difference between open- and closed-loop control in automation. This includes types of control, signal processing, and regulators.

Fieldbus Technology

Language: EN, DE, ES, FR, ZH
Learning Time: 2 hours

This course covers the basics of Fieldbus technology including the advantages of Fieldbus systems, design of Fieldbus systems, and topology.





Factory Automation

eLab Courses

Sensors for Object Detection New

Language: EN, DE, ES, FR
Learning Time: 16 hours
Equipment: Equipment set TP 1311 Sensors for object detection
In this course, you will learn about the properties, fields of application, advantages and disadvantages of different sensor types with TP 1311 and how to use them to detect different types of materials.

Fundamental Principles of Smart Sensors

Language: EN, DE, ES, FR
Learning Time: 11 hours
Equipment: Equipment Set TP 1312 Smart Sensors
Covers the principles of operation of smart sensors, including IO-Link communication, and how they can be used for the implementation of Industry 4.0.

Industrial Smart Sensors

Language: EN, DE, ES, FR
Learning Time: 14 hours
Equipment: Equipment Set TP 1312 Smart Sensors
Covers the principles of operation of smart laser distance sensors, pressure sensors, flow sensors, and temperature sensors, as well as RFID read/write devices and barcode readers.

Smart IO-Link Interface (ifm E30446)

Language: EN, DE, ES, FR
Learning Time: 3 hours
Equipment: Equipment Set TP 1312 Smart Sensors
Covers the advantages and applications of a smart IO-Link interface in the implementation of Industry 4.0. After completing the course, students will be be able to install a smart IO-Link interface and connect to it using a smart phone or tablet in order to monitor a smart sensor.

PLC Integration of Smart Sensors

Language: EN, DE, ES, FR
Learning Time: 12 hours
Equipment: Equipment Set TP 1312 Smart Sensors
Teaches students the basic procedures to integrate smart sensors in PLC programs through IO-Link communication.

Factory Automation

eLab Courses

Applied Pneumatics (MPS Joining)

Language: EN, DE, ES, FR
Learning Time: 18 hours
Equipment: MPS 400 Joining System Station
Get to know the electrical and pneumatic components of the MPS Joining Station and put the station into operation.

Applied Sensors and Actuators (MPS Distributing Pro)

Language: DE, EN, ES, FR, ZH
Learning Time: 14 hours
Equipment: MPS 400 System Module Distributing Pro
Get to know the electrical and pneumatic components of the MPS Distributing Station Pro and put the station into operation.

Distribution Station

Language: EN
Learning Time: 22 hours
Equipment: MPS distributing station D: Basic principles of mechatronic systems
This course covers the setup, adjustment, and troubleshooting of the components in the MPS distribution station. It also explains the principles of operation behind each component and process.

Joining Station

Language: EN
Learning Time: 26 hours
Equipment: Joining station MPS D – industrial Ethernet and IO-Link® communication
This course covers the setup, adjustment, and troubleshooting of the components in the MPS joining station. It also explains the principles of operation behind each component and process.

Sorting Station

Language: EN
Learning Time: 20 hours
Equipment: MPS-D sorting station
This course covers the setup, adjustment, and troubleshooting of the components in the MPS sorting station. It also explains the principles of operation behind each component and process.


IoT

Factory Automation

eLab Courses

Applied S7 Programming (MPS Sorting Inline)

Language: EN, DE, ES, FR
Learning Time: 19 hours
Equipment: MPS 400 Sorting Inline System Module, TIA Portal PLC Software (Step 7 Professional)
Get to know the basic principles of PLC programming using the MPS400 system module sorting inline and commission the station.

PLC Programming for Smart Systems

Language: EN, DE, ES, FR
Learning Time: 14 hours
Equipment: MPS 400 Sorting Inline System Module, TIA Portal PLC Software (Step 7 Professional)
In this course, you will design a modular program structure according to SOA and develop and test simple, reusable blocks using the MPS400 Sorting Inline System Module.

Applied Closed-Loop Control Technology Using the Example of a Tunnel Furnace New

Language: DE, EN
Learning Time: 8 hours
Equipment: D:CP-AM-OVEN-230V
In this course, you will analyze the controlled system of a tunnel furnace and regulate the temperature using a two-point controller and a PID controller.

Basics of RFID Technology New

Language: DE, EN, PL
Learning Time: 4 hours
Equipment: MPS RFID module
Explore the features of an RFID system and learn how to write data on an RFID tag.

From Object Identification to Product Memory with RFID

Language: DE, EN, ES, FR
Learning Time: 11 hours
Equipment: MPS 400 System Module Distributing Pro
You will become familiar with RFID as a form of object identification. Program the RFID system in the MPS 400 Distributing Station Pro and evaluate the RFID systems in product automation.

Factory Automation

eLab Courses

Smart Sensors for Smart Systems

Language: EN, DE, ES, FR

Learning Time: 10 hours

Equipment: MPS 400 System Module Distributing Pro

In this course, you will learn the basics of smart sensors and how to use the advantages of these sensors using the MPS400 System Module Distributing Pro.

Industrial Communication with PROFINET

Language: EN, DE, ES, FR

Learning Time: 10 hours

Equipment: MPS 400 System Module Distributing Pro

This course teaches you the basics and the handling of the industrial communication standard PROFINET using the MPS400 series.

Plant Visualization with HMI

Language: EN, DE, ES, FR

Learning Time: 18 hours

Equipment: MPS 400 System Module Distributing Pro

In this course you will learn the basics of the structure and function of an HMI. In numerous practical exercises, you will learn how to integrate and parameterize various visual control elements and objects in a user interface. Based on this, you will integrate sensors and actuators of the MPS 400 Distributor Pro into the project engineering.

Quality Assurance Through Weighing Technology New

Language: DE, EN

Learning Time: 9 hours

Equipment: MPS 400 Measuring Pro Station

In this course, you will acquire basic knowledge of weighing technology and its application for quality optimization. You will learn how to use load cells and process analog values in practice. The basics of statistical process control are also taught in order to increase efficiency and quality in production processes.

Factory Automation

eLab Courses

Programmable Logic Controller – Basic Programming

Language: EN

Learning Time: 15 hours

Equipment: Programmable Logic Controller AB MicroLogix 1100, 1200 or 1400

Covers the RSLogix Micro software from Rockwell, the development of ladder programs, and the most common PLC instructions.





Factory Automation

eLab Courses

I4.CORE Troubleshooting with the CP Application Module iDrilling New

Language: EN
Learning Time: 21 hours

In this course, you will learn to perform simple troubleshooting at the component level and in the areas of HMI, PLC and MES using the application module iDrilling.

I4.CORE Troubleshooting with the CP Application Module Magazine

Language: EN, DE
Learning Time: 22 hours

In this course, you will learn to perform simple troubleshooting at the component level and in the areas of HMI, PLC and MES using the application module Magazine.

I4.CORE Troubleshooting with the CP Application Module Measuring New

Language: EN
Learning Time: 15 hours

In this course, you will learn to perform simple troubleshooting at the component level and in the areas of HMI, PLC and MES using the application module Measuring.

I4.CORE: Troubleshooting with the CP Application Module Press New

Language: EN
Learning Time: 23 hours

In this course, you will learn to perform simple troubleshooting at the component level and in the areas of HMI, PLC and MES using the application module Press.

I4.CORE: Troubleshooting with the CP Application Module Turn Over New

Language: EN
Learning Time: 22 hours

In this course, you will learn to perform simple troubleshooting at the component level and in the areas of HMI, PLC and MES using the application module Turnover.

Factory Automation

eLab Courses

I4.CORE: Troubleshooting with the CP Application Module Camera Inspection New

Language: EN
Learning Time: 15 hours

In this course, you will learn to perform simple troubleshooting at the component level and in the areas of HMI, PLC and MES using the application module Camera inspection.

I4.CORE: Troubleshooting with the CP Application Module Labeling New

Language: EN
Learning Time: 14 hours

In this course, you will learn to perform simple troubleshooting at the component level and in the areas of HMI, PLC and MES using the application module Labeling.

I4.CORE Troubleshooting with the CP Application Module Output New

Language: EN
Learning Time: 23 hours

In this course, you will learn to perform simple troubleshooting at the component level and in the areas of HMI, PLC and MES using the application module Output.

Industrial Image Processing New

Language: EN, DE
Learning Time: 15 hours

In this course, you will learn how to set up an automatic visual inspection system and use image processing tools.

Factory Automation

eLab Courses

Basics of PLC Programming (LOGO!) with SkillsConveyor

Language: DE, EN, ES, FR
Learning Time: 10 hours
Equipment: SkillsConveyor (Mounted)
In this course you will learn the basics of programmable logic control of a mini control system on SkillsConveyor.

Basics of PLC Programming (S7) with SkillsConveyor

Language: DE, EN, ES, FR
Learning Time: 11 hours
Equipment: SkillsConveyor (Kit), SkillsConveyor (Mounted)
In this course you will learn the basics of PLC programming on the SkillsConveyor.

Applied PLC Programming and Sensor Technology with SkillsConveyor New

Language: DE, EN
Learning Time: 14 hours
Equipment: SkillsConveyor (Mounted)
Expand your skills in applied programmable logic control technology and digital and analog sensor technology and set up a simple sorting process with SkillsConveyor and the Distributing and Sorting SkillsPackage.

Additive Manufacturing (SkillsMagazine Kit)

Language: DE, EN, ES, FR
Learning Time: 21 hours
Equipment: MPS Stacking magazine module
Design components of the “stacking magazine” assembly in a CAD program and manufacture them using additive manufacturing processes. Afterward, join the components with the other parts of the kit to form a functioning “stacking magazine” assembly.

Basics of Additive Manufacturing

Language: DE, EN, ES, FR
Learning Time: 17 hours

Learn about the application options of additive manufacturing in different sectors.





Factory Automation

eLab Courses

CIROS V6 – Basics of 3D Simulation New

Language: DE, EN, ES, FR
Learning Time: 5 hours
Equipment: CIROS-V6
Get an overview of different modeling, teaching and programming of a robot as well as different functions of CIROS models.

CIROS V7 – Basics of 3D Simulation New

Language: DE, EN, ZH
Learning Time: 5 hours
Equipment: CIROS-V7

This course offers comprehensive insight into modeling and automation with CIROS. You will become familiar with the extensive functions of CIROS and develop competencies in the design and simulation of automated robot systems.

Introduction to Robotics with 3D Simulation

Language: EN, DE
Learning Time: 8 hours
Equipment: CIROS-V7

In this course you will learn to check the completeness of simulation models and analyze the functionality of automation components. You will acquire practical skills in the programming of industrial robots, including the creation and testing of programs. We use the robot model MPS D Robotics as an example.

Autonomous Mobile Robotics with Robotino 4

Language: DE, EN, ES, FR, ZH
Learning Time: 26 hours
Equipment: Robotino 4

In this course, you will learn about the functions and features of the Robotino 4 mobile robots and how to use them.

Robotino 4 Add-on for Asset Administration Shell

Language: EN
Learning Time: 8 hours
Equipment: Robotino 4

Learn about the asset administration shell (AAS) and how to apply it to automated production. Develop the skills to create your own asset administration shell and to interact with it.

Factory Automation

eTheory Courses

Introduction to Robotics

Language: DE, EN, ES, FR
Learning Time: 8 hours

Get to know the variety in robotics and its functions, modes of operation and application areas in modern industry.

Introduction to Collaborative Robotics (HRC)

Language: DE, EN, ES, FR
Learning Time: 2 hours

The following course provides you with an insight into collaborative robotics and the associated special requirements in industry.

Introduction to Additive Manufacturing

Language: DE, EN, ES, FR
Learning Time: 7 hours

Learn about different manufacturing methods in additive manufacturing such as stereolithography and selective sintering. Get familiar with the modern methods and application options of 3D printing.

Introduction to RFID Technology

Language: DE, EN
Learning Time: 4 hours

Learn about different identification methods such as binary code, QR code and RFID.


FESTO
Grundlagen der intelligenten Sensoren
Struktur

Factory Automation

Evaluations

Basics of Additive Manufacturing

Language: DE, EN, ES, FR

Check your knowledge. Complete 20 interactive tasks on manufacturing processes.

Additive Manufacturing

Language: DE, EN, ES, FR

Check your acquired knowledge. Complete 20 interactive tasks on manufacturing processes.

Basics of Machine Safety

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of Machine Safety

Basics of Sensors

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of Sensors.

Fundamental Principles of Smart Sensors

Language: DE, EN
Equipment: Equipment Set TP 1312 Smart Sensors

This evaluation gives you the opportunity to measure your knowledge on the following topic: Fundamental Principles of Smart Sensors.

Factory Automation

Evaluations

Industrial Smart Sensors

Language: DE, EN, ES, FR
Equipment: Equipment Set TP 1312 Smart Sensors

This evaluation gives you the opportunity to measure your knowledge on the following topic: Industrial Smart Sensors.

Basics of PLC Programming

Language: DE, EN, ES, FR

Check your acquired knowledge. Complete 20 interactive questions on the basics of PLC programming.

Basics of PLC Programming (LOGO!) with SkillsConveyor

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of PLC Programming (LOGO!) with SkillsConveyor.

Basics of PLC Programming (S7) with SkillsConveyor

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of PLC Programming (S7) with SkillsConveyor.

PLC Programming for Smart Systems

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: PLC Programming for Smart Systems.

Factory Automation

Evaluations

Product Memory with RFID

Language: EN, DE, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Product Memory with RFID.

Basics of Plant Visualization with HMI

Language: EN, DE, ES, FR

Check your acquired knowledge. Complete 20 interactive tasks on the basics of plant visualization with HMI.

Basics of Robotics

Language: EN, DE, ES, FR

Test your learned knowledge. Complete 20 interactive tasks on the basics of robotics.

Basics of Collaborative Robotics

Language: EN, DE, ES, FR

Check your acquired knowledge. Complete 20 interactive tasks on the basics of collaborative robotics.



Factory Automation

Videos

Robotics - Explained in 5 Minutes

Language: EN, DE
Learning Time: 15 minutes

This video describes the role of robotics in industry and explains the basic functions and components of a robot.

Cobots - Explained in 5 Minutes

Language: EN, DE
Learning Time: 15 minutes

This video introduces cobots and their potential applications in industry. The focus is on the different degrees of cooperation.

3D Printing - Explained in 5 Minutes

Language: EN, DE
Learning Time: 15 minutes

The additive manufacturing process offers a wide range of opportunities for industry. This video shows what 3D printing means and how an object is 3D printed.

Additive Manufacturing Processes - Explained in 5 Minutes

Language: EN, DE
Learning Time: 15 minutes

This video introduces the most established 3D printing processes.

Smart Maintenance – Explained in 5 Minutes New

Language: EN, DE
Learning Time: 15 minutes

In this short video, Marc Schmid explains the importance of maintenance and servicing in industry and shows how “Smart Maintenance” can complement the TPM method to increase overall equipment effectiveness. He also emphasizes how the use of technology and data analytics can help companies reduce downtime and improve productivity.

Factory Automation

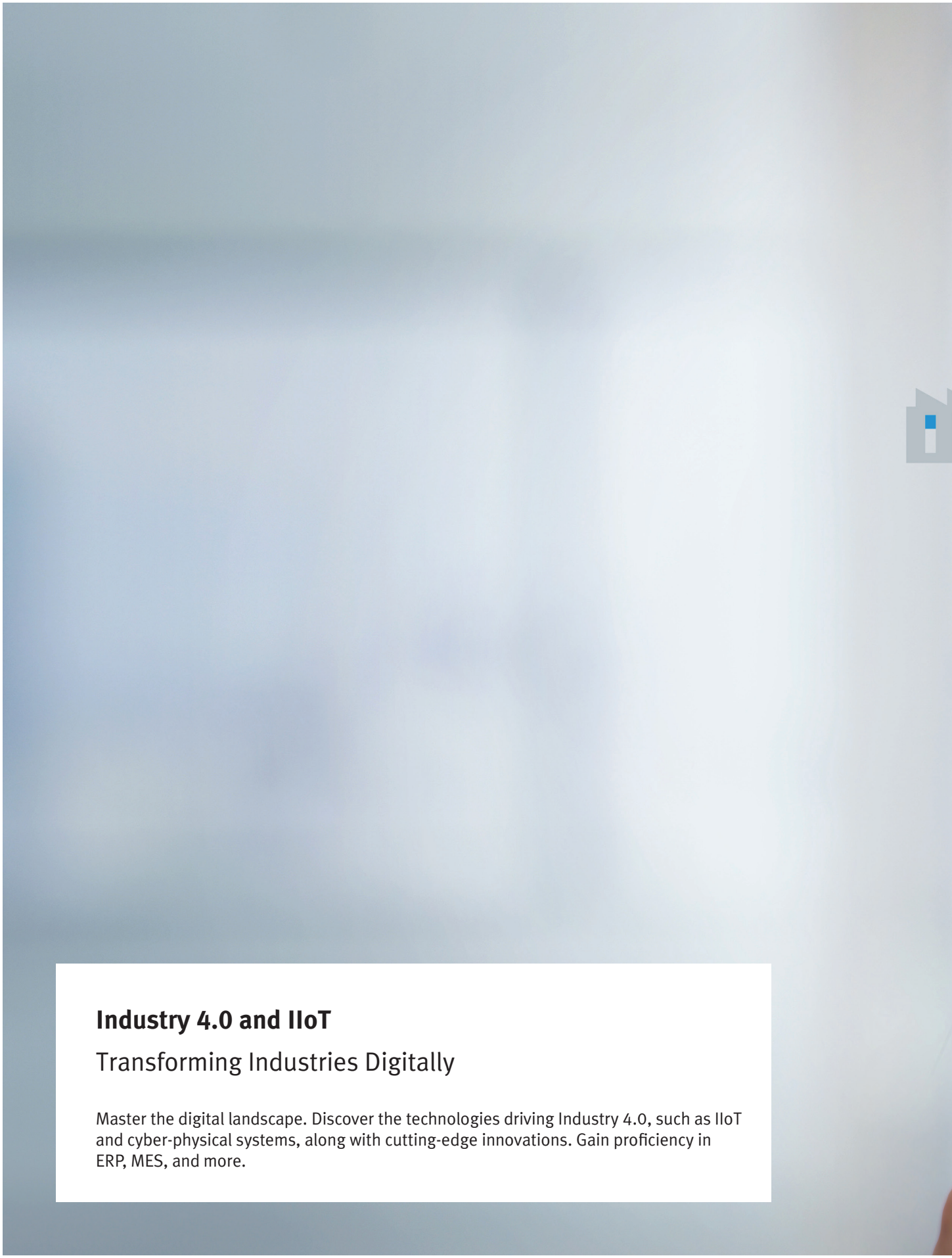
Videos

Digital Maintenance and Incident Management with Smartenance - Spotlight New

Language: EN, DE
Learning Time: 15 minutes

The video shows the possibilities and advantages of a digital smart maintenance tool. It presents the Smartenance app from Festo as an example.





Industry 4.0 and IIoT

Transforming Industries Digitally

Master the digital landscape. Discover the technologies driving Industry 4.0, such as IIoT and cyber-physical systems, along with cutting-edge innovations. Gain proficiency in ERP, MES, and more.


FESTO
Search
Welcome to
Industry 4.0
Industry 4.0 marks the beginning of a new era of information processing. Industry 4.0 means the introduction of Internet technologies into production, especially intelligent and digitally networked systems.
Learn More

Industry 4.0 and IIoT

eLearning Courses

Introduction to Industry 4.0

Language: EN, DE, ES, FR
Learning Time: 2 hours

Learn more about the core technologies and development of the 4th Industrial Revolution and how these changes are impacting our personal and professional lives.





Industry 4.0 and IIoT

eLab Courses

Smart IO-Link Interface (P&F SmartBridge)

Language: EN
Learning Time: 2 hours
Equipment: Equipment Set TP 1312 Smart Sensors
Covers the advantages and applications of a smart IO-Link interface in the implementation of Industry 4.0. After completing the course, students will be able to install a smart IO-Link interface and connect to it using a smart phone or tablet in order to configure and monitor a smart sensor.

IT-Security for Production Systems

Language: DE, EN, ES, FR
Learning Time: 6 hours
Equipment: Equipment set TP 1333: networks and IT Security
This course provides a hands-on approach to Ethernet technology and secure communication based on an industrial Siemens router and switch.

Basics of CAD Design with NX

Language: DE, EN, ES, FR
Learning Time: 6 hours

In this course you will learn the basic principles and procedures for structured setup of assemblies with Siemens NX.

Basics of Modeling with NX MCD

Language: DE, EN, ES, FR
Learning Time: 6 hours

In this course, you will learn to work with kinematic/physical simulations with the NX extension Mechatronics Concept Designer (MCD).

Modeling with NX MCD

Language: DE, EN, ES, FR
Learning Time: 12 hours
Equipment: Siemens NX Mechatronics Concept Designer
In this course, you will learn about the modeling and simulation of CP Lab modules using the NX Mechatronics Concept Designer (MCD).

Industry 4.0 and IIoT

eLab Courses

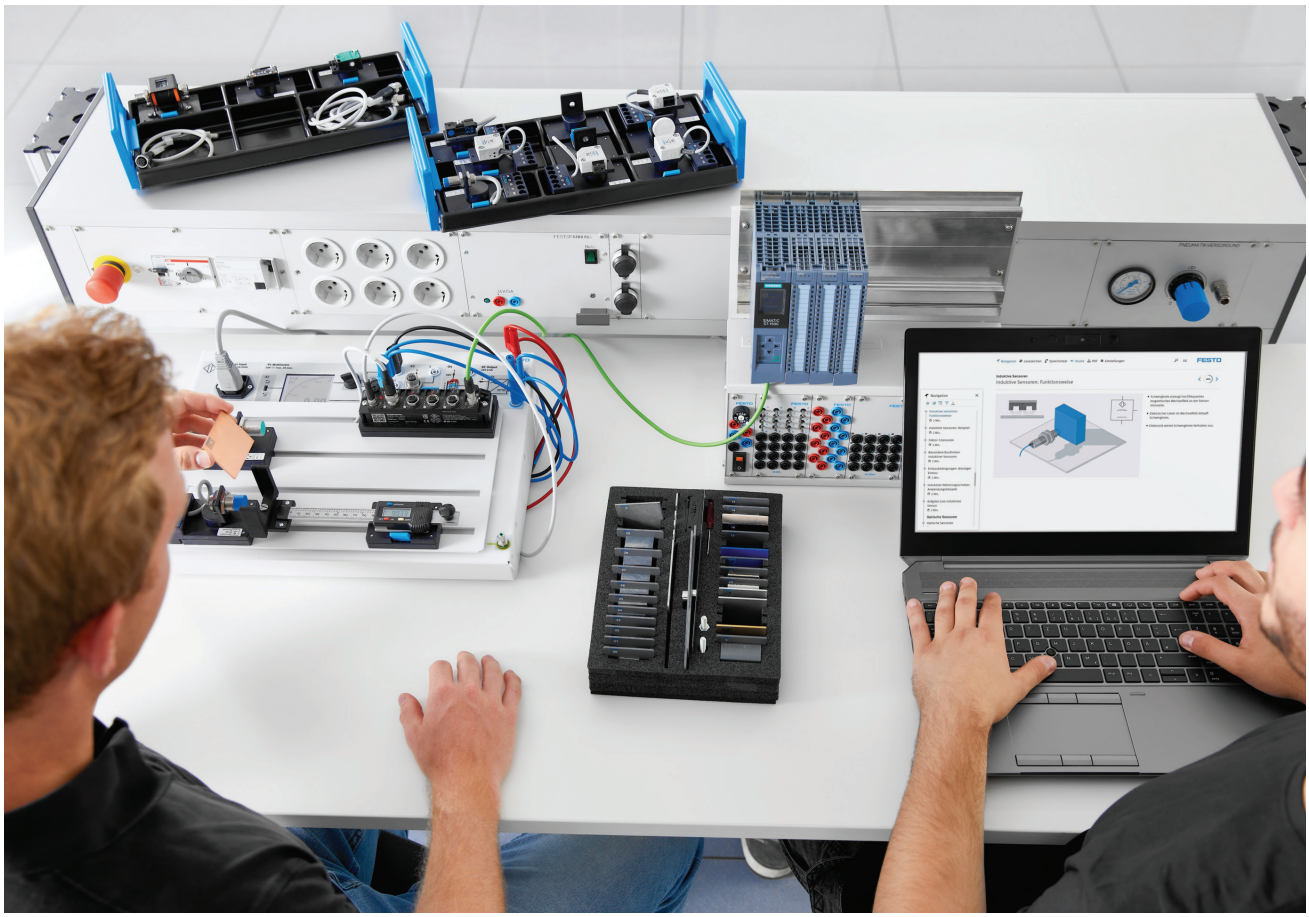
Virtual Commissioning with NX MCD

Language: DE, EN, ES, FR
Learning Time: 7 hours

In this course you will learn how to perform a virtual commissioning of a CP Lab magazine application module.

Basics of Virtual Commissioning with NX MCD

Language: DE, EN, ES, FR
Learning Time: 8 hours
Equipment: PLC Software (Step 7 Professional), TIA Portal PLC Software (Step 7 Professional)
In this course you will learn how to execute a virtual commissioning using the CP Lab belt as an example.



Industry 4.0 and IIoT

eLab Courses

Industrial Communication with OPC-UA

Language: EN, DE, ES, FR
Learning Time: 4 hours
Equipment: MPS System 403-1

This course teaches you the basics and setup of OPC UA communication in the industrial environment using the MPS400 series.

Plant Control and Commissioning with MES

Language: EN, DE, ES, FR
Learning Time: 14 hours
Equipment: MPS System 403-1

In this course you will learn the basics of production planning and control. In particular, you will get to know one system: the Manufacturing Execution System - MES for short. In numerous practical tasks, you will work on the basics of production planning and control using the example of MES4 on the MPS400 system.

Energy Efficiency in Production

Language: EN, DE, ES, FR
Learning Time: 9 hours
Equipment: MPS System 403-1

Learn the basics of energy efficiency and optimization strategies for a technical system.

Artificial Intelligence in Production

Language: EN, DE, ES, FR
Learning Time: 5 hours
Equipment: MPS-D sorting station

Learn how artificial intelligence, and machine learning in particular, is being applied to industrial production. Train a process that takes over the fill level monitoring of the chutes on the Sorting Inline system building block of the MPS 400.

Industry 4.0 and IIoT

eLab Courses

Object Detection with AI New

Language: EN, DE

Learning Time: 4 hours

Equipment: Collaborating robot for workpieces

Gripping components requires that both the type and the position of the component to be gripped can be determined with high accuracy by object detection. For this purpose, the AI used uses a neural network that has been trained using the learning strategy of supervised learning and can also be further optimized at the runtime of the actual application if necessary.

Anomaly Detection in Maintenance with Festo AX New

Language: DE, EN, ES, FR

Learning Time: 4 hours

Equipment: Cyber Physical Systems CP Systems

In this course you will learn how to monitor components of your learning factory with Festo AX and how to assess the health of your system.



Industry 4.0 and IIoT

eTheory Course

AAS - Communication Architecture of I4.0

Language: EN, DE
Learning time: 6 hours

Industry 4.0 marks the beginning of a new era of information processing. Learn how AAS (Asset Administration Shell) enables new forms of communication between technologies, products and digitally networked systems.

From Maintenance to Smart Maintenance

Language: DE, EN, ES, FR
Learning time: 7 hours

Learn about various maintenance strategies. You will learn which advantages and disadvantages they have and the right circumstances in which to use them.





Industry 4.0 and IIoT

Evaluation

Basics of Smart Sensors

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of Smart Sensors

Basics of Network Technology

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of Network Technology.

Basics of PROFINET

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of PROFINET.

Industrial Communication with OPC-UA New

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Industrial Communication with OPC-UA.

AAS – Communication Architecture of I4.0

Language: DE, EN

Check your acquired knowledge of the asset administrative shell.

Basics of CAD Design with NX

Language: DE, EN, ES, FR

Test your learned knowledge. Complete 20 interactive tasks on the basics of CAD design with NX.

Industry 4.0 and IIoT

Evaluation

Basics of Modeling with NX MCD

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Modeling with NX MCD.

Basics of Virtual Commissioning with NX MCD

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of Virtual Commissioning with NX MCD.

Basics of MES

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of MES.

Basics of Energy Efficiency

Language: DE, EN, ES, FR

Check your acquired knowledge. Complete 20 interactive tasks on the the basics of energy efficiency.

Basics of Artificial Intelligence

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of Artificial Intelligence.

Total Productive Maintenance

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Total Productive Maintenance.

Industry 4.0 and IIoT

Evaluation

From Maintenance to Smart Maintenance

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: From Maintenance to Smart Maintenance.



Industry 4.0 and IIoT

Videos

The four Industrial Revolutions - Explained in 5 Minutes

Language: EN, DE
Learning Time: 15 minutes

The term Industry 4.0 refers to the “fourth industrial revolution”. This video addresses the significant changes that the four industrial revolutions had on production processes, as well as the massive impact on society as a whole.

Industry 4.0 in Production - Explained in 5 Minutes

Language: EN, DE
Learning Time: 15 minutes

Empty factories? Self-controlling processes? The complete digitization of production? This video provides an insight into what Industry 4.0 means for production and how companies can take advantage of the topic.

Enabling Technologies - Artificial Intelligence, Cobots & CP Systems

Language: EN
Learning Time: 15 minutes

This video gives you an introduction to Industry 4.0 technologies like big data, artificial intelligence, cobots and cyber physical systems.

Enabling Technologies - Big Data, Cloud & Cybersecurity

Language: EN
Learning Time: 15 minutes

This video explaines the value of big data, cloud technology and cybersecurity in the contex of Industry 4.0.

Enabling Technologies - Augmented Reality & AGVs

Language: EN
Learning Time: 15 minutes

This video shows an introduction of the technologies augmented reality, automated guided vehicles as well as self guided vehicles in industrial production.

Industry 4.0 and IIoT

Videos

Machine Learning – Explained in 5 Minutes

Language: EN, DE
Learning Time: 15 minutes

In this video, Tobias Schubert provides a brief overview of machine learning and the basic approaches of supervised, unsupervised and reinforcement learning.

Artificial Intelligence – Explained in 5 Minutes

Language: EN, DE, ES, FR
Learning Time: 15 minutes

Artificial intelligence is one of the top topics of our time. This video introduces the keyword and gives a first insight into the topic.

Deep Learning – Explained in 5 Minutes

Language: EN, DE
Learning Time: 15 minutes

Tobias explains the approach of Deep Learning in the context of Artificial Intelligence.

Blockchain - Explained in 5 Minutes

Language: EN, DE
Learning Time: 15 minutes

This video explains the blockchain technology. It gives insights into the topic and its importance for the industry.

Metaverse – Explained in 5 Minutes New

Language: EN, DE
Learning Time: 15 minutes

This video explains the Metaverse and the Industrial Metaverse. The Metaverse is an interactive virtual world, while the Industrial Metaverse utilizes digital twins of machines for cost-effective simulation and optimization. Blockchain technology secures the documentation of interactions and production data, enabling new business models and efficiency improvements.

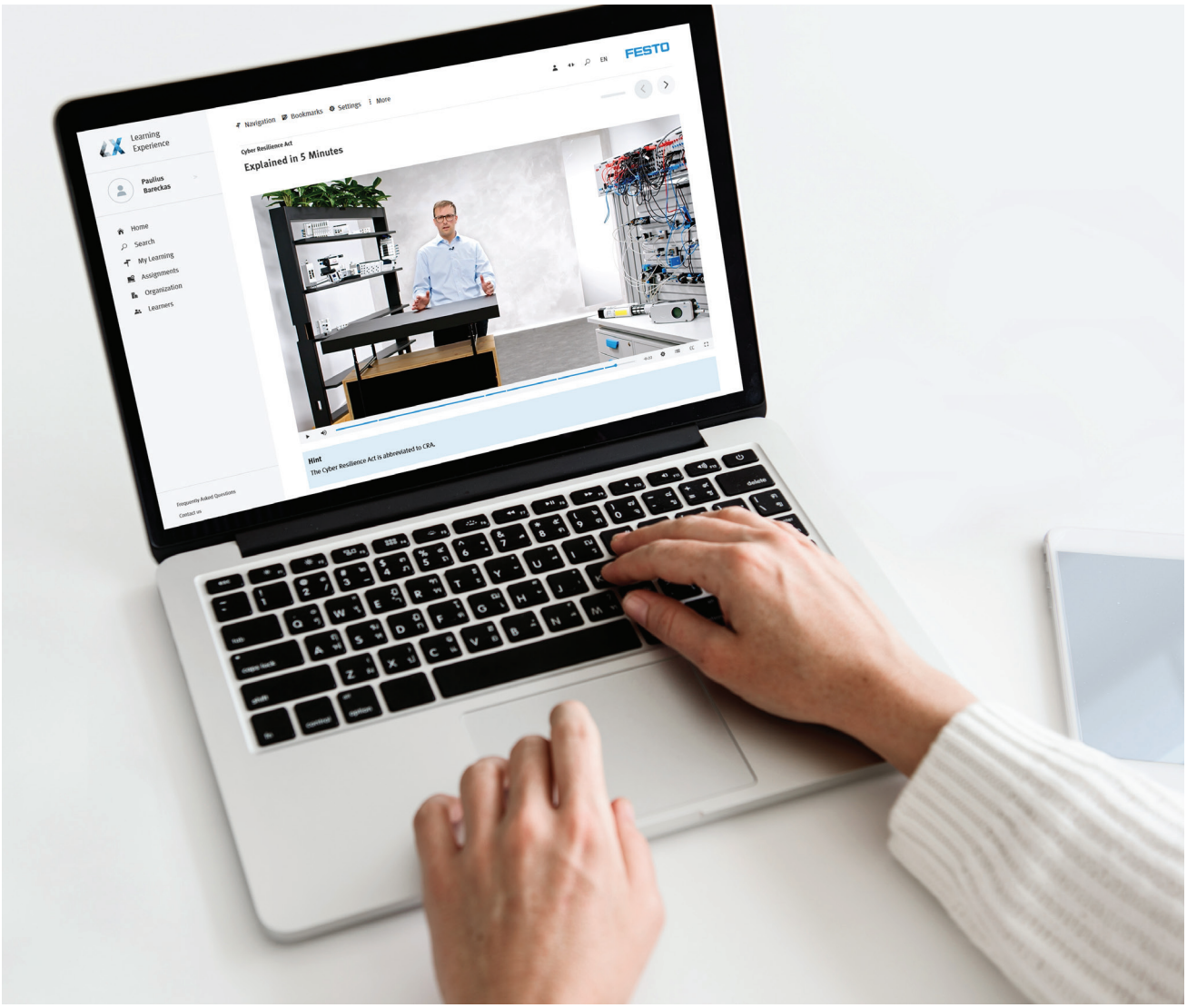
Industry 4.0 and IIoT

Videos

Cyber Resilience Act – Explained in 5 Minutes New

Language: EN, DE
Learning Time: 15 minutes

Cyberattacks are on the rise — and the EU is responding with the Cyber Resilience Act to make digital products more secure and reduce vulnerabilities. Under this new regulation, manufacturers must meet stricter security requirements in order to continue selling their products in Europe. In this video, you learn about the Cyber Resilience Act, what it means for businesses and customers and how companies can prepare to stay compliant and competitive in a changing digital landscape.





Electric Power Technology

Unleash the potential of electricity to power industries

Unleash the potential of electricity to power industries. Explore the latest advancements, from fundamentals to cutting-edge applications , to generate, convert, distribute, control, and use electrical energy safely and efficiently.



Electric Power Technology

eLearning Courses

Actuators – DC Motor

Language: DE, EN, ES, FR, ZH
Learning Time: 2 hours

This course covers the function of actuators in mechatronic systems using the everyday example of a car park access control system.

Electric Drives 1

Language: DE, EN, ES, FR, IT, KO, LT, RU, SV, ZH, IT, KO
Learning Time: 3 hours

This course covers the basic principles of electrical drives as well as the construction and function of DC and AC motors.

Electric Drives 2

Language: DE, EN, ES, FR, IT, LT, ZH, IT
Learning Time: 2 hours

This course further expands the principles of electric drives including the controlling of DC and AC motors, energy effiency as well as economic and environmental aspects.

Power Factor Correction New

Language: EN, FR
Learning Time: 1 hours

Teaches the basic concepts of power factor correction, both in electrical substation and in large industrial applications.

Lead-Acid Batteries New

Language: EN
Learning Time: 2 hours

Teaches the operation of lead-acid batteries, including their charge and discharge characteristics, as well as their most common charging methods.

Electric Power Technology

eLearning Courses

Lithium-Ion Batteries New

Language: EN
Learning Time: 1 hour

Teaches the operation of lithium-ion batteries, their charge/discharge characteristics and their safe charging/discharging techniques using a battery management system.

Solar Power New

Language: EN
Learning Time: 3 hours

Covers the production of electrical energy from solar power, with emphasis on the use and operation of photovoltaic panels.

Introduction to Wind Power New

Language: DE, EN
Learning Time: 2 hours

Teaches the basic concepts of wind power.



Electric Power Technology

eLab Courses

Basic Principles of Digital Technology

Language: EN, DE
Learning Time: 7 hours
Equipment: Equipment set TP 1012: Basic principles of digital technology
Covers the basic principles of digital technology using the TP 1012.

Fundamentals of Analog Technology

Language: EN, DE
Learning Time: 6 hours
Equipment: Equipment set TP 1410: Servo brake and drive system
Covers the fundamentals of analog technology using the TP 1024.

DC Circuit Fundamentals

Language: EN, ES, FR, DE
Learning Time: 14 hours
Equipment: AC/DC Training System
Teaches the basic concepts of electricity and how to calculate voltage, current, resistance, and power in dc power circuits.

AC Circuit Fundamentals

Language: EN, ES, FR
Learning Time: 8 hours
Equipment: AC/DC Training System
Teaches the fundamentals of basic elements in ac power circuits, such as capacitors, inductors, transformers, relays, and contactors.

DC Power Electronics

Language: DE, EN, FR
Learning Time: 12 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Covers power electronic components and circuits (choppers) required to manage dc power, such as dc power stored in batteries or produced from wind power or solar power.

Electric Power Technology

eLab Courses

Single-Phase AC Power Electronics

Language: EN, DE
Learning Time: 4 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Teaches the basic concepts of power electronic circuits (rectifiers and inverters) used to perform ac/dc power conversion in single-phase circuits.

Electrical Protection Measures

Language: EN, DE
Learning Time: 4 hours
Equipment: TP 1111: Power supply systems and protective measures
In this course, you will learn about electrical protection measures and analyze application scenarios for their danger potential.

Power Supply Systems and Protective Measures

Language: EN, DE
Learning Time: 6 hours
Equipment: TP 1111: Power supply systems and protective measures
Covers the basic principles of power supply systems and protective measures using the TP 1111.

Electrical safety measures for metalworking occupations

Language: DE, EN
Learning Time: 2 hours
Equipment: TP 1110: Electrical safety measures for metalworking occupations
Covers the most common electrical safety measures for metalworking occupations using the TP 1110.

Basic Principles of Electrical Installations

Language: DE, EN
Learning Time: 3 hours
Equipment: Advanced PLC Training System (Rockwell Automation)
Covers the basic principles of electrical installations using the TP 1121.

Electric Power Technology

eLab Courses

Fundamentals of Circuits with Contacts

Language: EN, DE
Learning Time: 4 hours
Equipment: TP 1221: Basic Motor Control Technology
Covers the fundamentals of circuits with contacts using TP 1211.

Basic Principles of Closed-Loop Control Technology

Language: EN, DE
Learning Time: 4 hours
Equipment: TP 1013: Basic principles of control technology
Basic principles of closed-loop control technology

Fundamentals of DC Machines

Language: EN, DE
Learning Time: 4 hours
Equipment: TP 1410: Servo brake and drive system
Covers the fundamentals of DC machines using the TP 1410.

Fundamentals of AC Machines

Language: EN, DE
Learning Time: 3 hours
Equipment: TP 1410: Servo brake and drive system
Covers the fundamentals of AC machines using the TP 1410.

Fundamentals of Three-Phase Current Machines

Language: EN, DE
Learning Time: 4 hours
Equipment: TP 1410: Servo brake and drive system
Covers the fundamentals of three-phase current machines using the TP 1410.

Electric Power Technology

eLab Courses

Fundamentals of Servo Motor Drive Technology

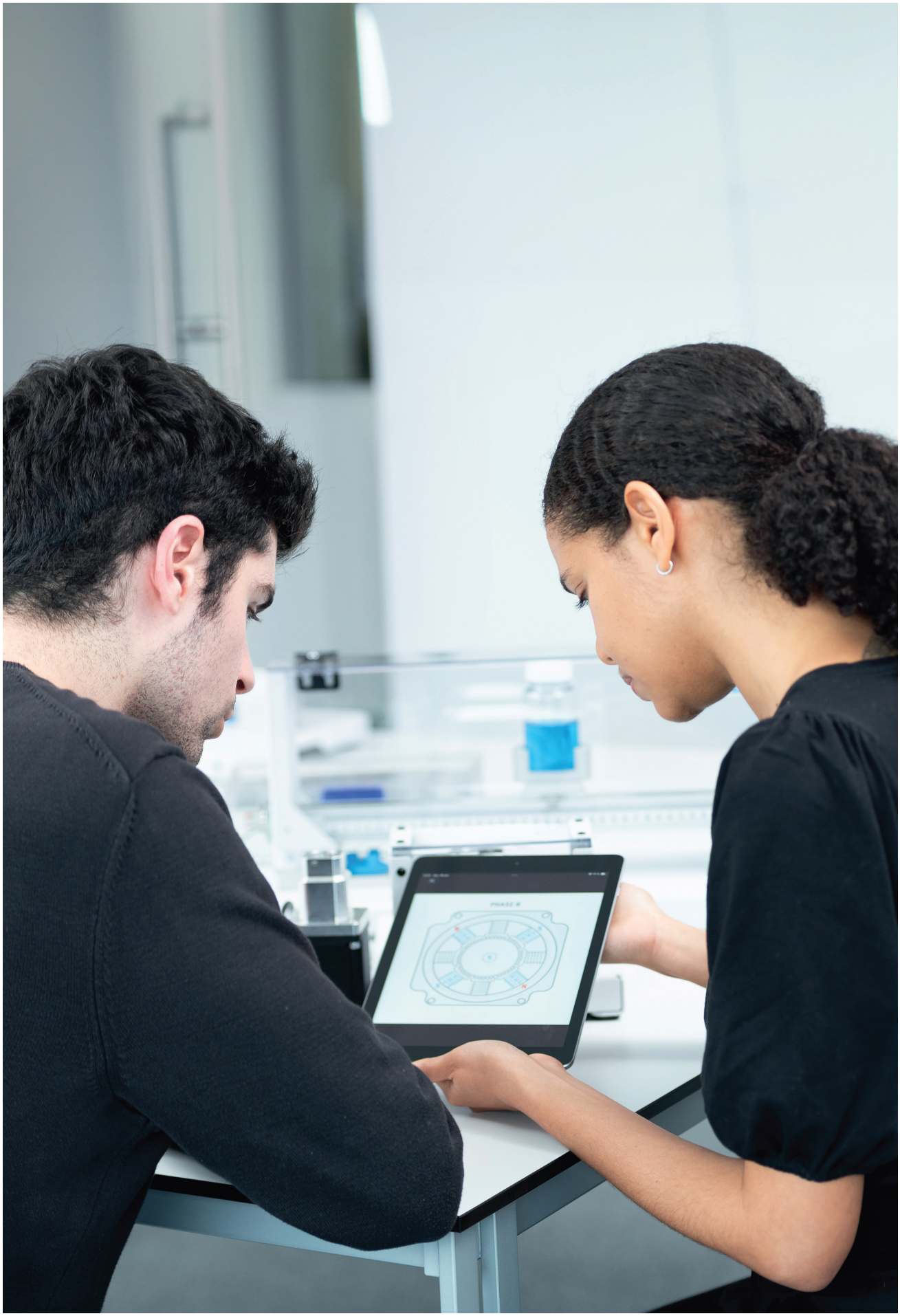
Language: EN, DE
Learning Time: 7 hours
Equipment: TP 1421: Servo motor drive technology
Covers the fundamentals of servo motor drive technology using the TP 1421.

Basic Principles of Stepper Motor Drive Technology

Language: EN, DE
Learning Time: 6 hours
Equipment: TP 1422: Stepper motor drive technology
Covers the basic principles of stepper motor drive technology using the TP 1422.

Basic Motor Control Technology

Language: EN
Learning Time: 31 hours
Equipment: TP 1221: Basic Motor Control Technology
Covers basic control circuits, three-phase induction motors, motors protection, reversible motor starters, braking, and reduced voltage motor starting.



Electric Power Technology

eLab Courses

Three-Phase PWM Rectifier/Inverter

Language: EN
Learning Time: 4 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Teaches the basic concepts of three-phase PWM rectifiers/inverters.

Three-Phase AC Power Electronics

Language: EN, DE, FR
Learning Time: 5 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Introduces students to the operation of three-phase ac power electronics.

Three-Phase Motor Drives

Language: EN, DE, FR
Learning Time: 4 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Covers the operation of three-phase, variable-frequency induction-motor drives.

Speed Control of Three-Phase Asynchronous Motors with Frequency Converters

Language: DE, EN
Learning Time: 3 hours
Equipment: Equipment set TP 1410: Servo brake and drive system
Covers the speed control of three-phase asynchronous motors with frequency converters.

Single-Phase Power Transformer

Language: DE, EN, FR
Learning Time: 8 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Teaches the basic concepts of power transformers, including: turns, voltage, and current ratios, winding polarity, power losses, efficiency, voltage regulation, and operating frequency.

Electric Power Technology

eLab Courses

AC Transmission Lines

Language: EN, DE, FR
Learning Time: 8 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Covers the characteristics and behavior of high-voltage ac transmission lines and the voltage compensation of these lines using switched shunt compensation (SSC).

HVDC Transmission Systems

Language: EN, FR
Learning Time: 14 hours
Equipment: EMS 0.2 kW
Covers the principles of operation of HVDC transmission systems and their applications.

Introduction to Electric Power Substations

Language: EN, FR
Learning Time: 8 hours
Equipment: EMS 0.2 kW
Covers the principles of operation, components, switching schemes, and design of electric power substations.

Static Var Compensator (SVC)

Language: EN, FR
Learning Time: 6 hours
Equipment: EMS 0.2 kW
Teaches the basic concepts of voltage compensation in ac transmission lines and power factor correction in large industrial plants using static var compensators (SVCs).

Static Synchronous Compensator (STATCOM)

Language: EN, FR
Learning Time: 4 hours
Equipment: EMS 0.2 kW
Teaches the basic concepts of voltage compensation in ac transmission lines and power factor correction in large industrial plants using static synchronous compensators (STATCOMs).



Electric Power Technology

eLab Courses

Photovoltaic Systems

Language: EN, DE
Learning Time: 9 hours
Equipment: TP 8012/5/6 EMS Europe
Covers photovoltaic (PV) systems, i.e., systems that convert sunlight into electric power that can be used to power electrical equipment or feed the local ac power network.

Home Energy Production

Language: EN
Learning Time: 10 hours
Equipment: EMS 0.2 kW
Covers the production of ac power from dc power generated using renewable natural resources (e.g., wind, sunlight, rain, etc.) or stored in batteries.

Electric Vehicle AC Charging Stations New

Language: EN
Learning Time: 12 hours
Equipment: Electric Vehicle AC Charging Station Trainer
Teaches the fundamentals of electric vehicle charging stations.

Energy-Efficient Lighting Engineering

Language: EN, DE
Learning Time: 4 hours
Equipment: TP 1141: Energy-efficient lighting engineering
Covers the basic principles of energy-efficient lighting engineering using the TP 1141.

Fluorescent Lamps

Language: EN, DE
Learning Time: 4 hours
Equipment: TP 1142: Fluorescent lamps
Covers the basic principles of fluorescents lamps using the TP 1142.

Electric Power Technology

eLab Courses

High-Pressure Discharge Lamps

Language: EN, DE
Learning Time: 3 hours
Equipment: TP 1143: High-pressure discharge lamps
Covers the basic principles of high-pressure discharge lamps using the TP 1143.

Microcontroller Programming

Language: EN, DE
Learning Time: 5 hours
Equipment: TP1515 - Microcontroller development system for PIC 8bits, TP1516 - Microcontroller development system for Arduino
Covers the basic principles of microcontroller programming using the TP 1515/TP 1516.





Electric Power Technology

eLab Courses

DC Power Circuits

Language: DE, EN, FR, FR

Learning Time: 5 hours

Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe

Teaches the basic concepts of electricity and how to calculate voltage, current, resistance, and power in dc power circuits.

Power Circuits and Transformers

Language: EN, DE

Learning Time: 27 hours

Equipment: Computer-Assisted 0.2 kW Electromechanical Training System

Provides a foundation for the study of electrical power technology using the Computer-Assisted 0.2 kW Electromechanical Training System.

Single-Phase AC Power Circuits (Without Model 8333)

Language: DE, EN, ES, FR, RU

Learning Time: 12 hours

Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe

Teaches the basic concepts of alternating current: sine waves, inductors, capacitors, the different types of power, and the resolution of circuits. Does not require module 8333.

Single-Phase AC Power Circuits (With Model 8333)

Language: EN

Learning Time: 12 hours

Equipment: EMS 0.2 kW

Important: This version of the course is designed for users who own the module Inductive and Capacitive Loads, Model 8333. If you do not own this module, proceed instead to the other version of the course.

Three-Phase AC Power Circuits

Language: DE, EN, FR

Learning Time: 5 hours

Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe

Teaches the basic concepts of three-phase ac power, including: wye and delta configurations, calculating phase and line voltages, and measuring three-phase power.

Electric Power Technology

eLab Courses

Permanent Magnet DC Machine

Language: EN, FR
Learning Time: 6 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Teaches the basic concepts of permanent magnet dc machines used as motors and generators, including their construction, operating principles, and characteristic curves.

Conventional DC Machines and Universal Motor

Language: EN, FR
Learning Time: 12 hours
Equipment: EMS 0.2 kW
Covers the following machines: separately-excited, shunt, series, and compound dc motors, separately-excited, shunt, and compound dc generators, and universal motor.

Single-Phase Induction Motors

Language: EN, FR
Learning Time: 2 hours
Equipment: EMS 0.2 kW
Covers the operation and characteristics of the following two types of single-phase induction motor: capacitor-start induction motor and split-phase induction motor.

Three-Phase Rotating Machines

Language: EN, FR
Learning Time: 14 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Teaches the basic concepts of motors and generators and covers the following machines: three-phase squirrel-cage induction machines and three-phase synchronous machines.

Three-Phase Wound-Rotor Induction Machines

Language: EN, FR
Learning Time: 3 hours
Equipment: EMS 0.2 kW
Covers the operation of three-phase wound-rotor induction machines.

Electric Power Technology

eLab Courses

Three-Phase Induction Motor Starters

Language: EN, FR
Learning Time: 4 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Covers the basic principles of three-phase induction motor starters.

DC Motor Drives

Language: EN, FR
Learning Time: 6 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Covers the operation of dc motor drives.

BLDC Motors and Vector Control PMSM Drives

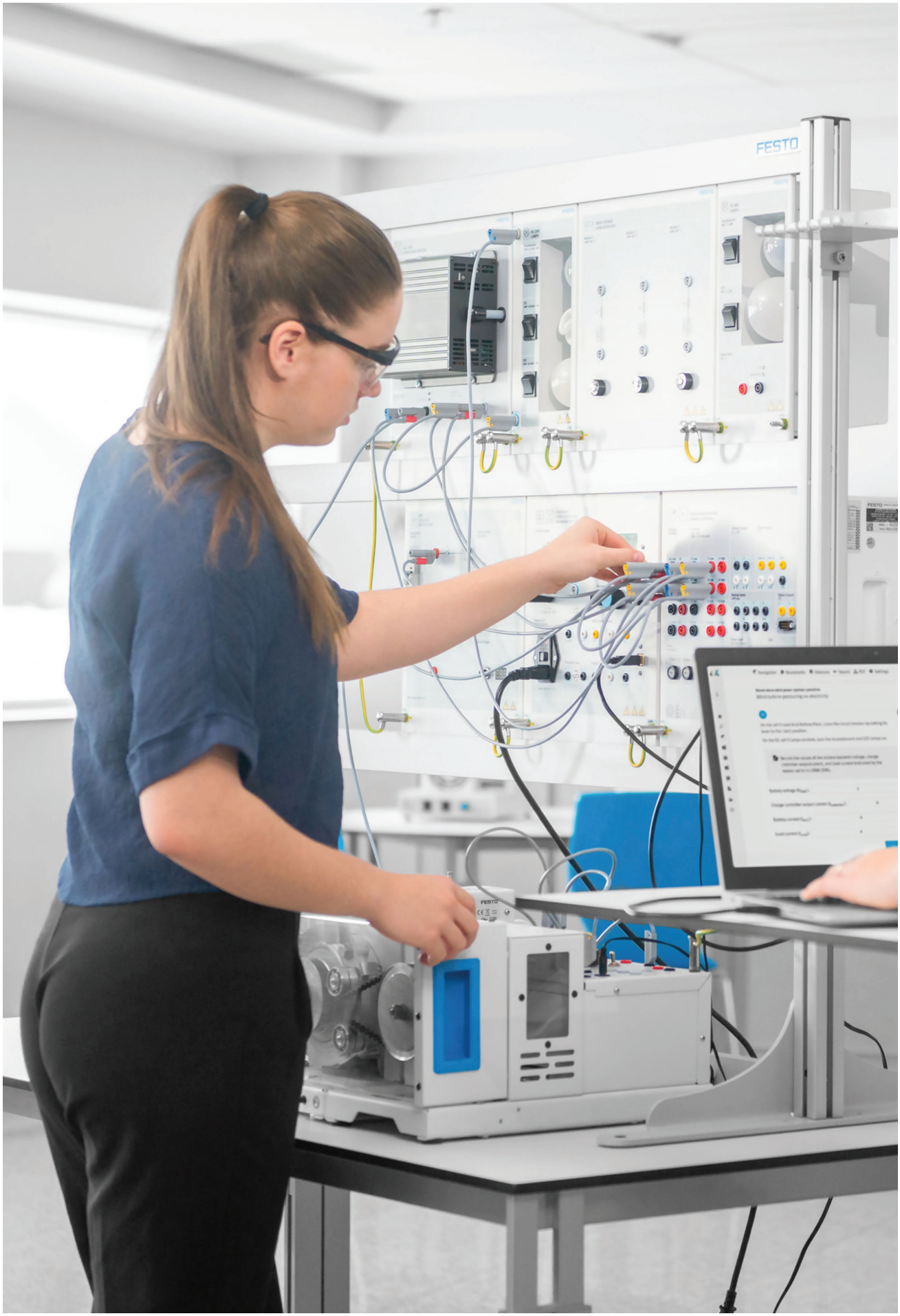
Language: EN
Learning Time: 8 hours
Equipment: EMS 0.2 kW
Teaches the basic concepts of brushless direct current (BLDC) motors and vector control permanent magnet synchronous machine (PMSM) drives.

Thyristor Power Electronics

Language: DE, EN, FR
Learning Time: 13 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Covers the power diode, power thyristor, solid state relay, and zero-voltage switched (ZVS) SSR, four components sed in power electronics circuits for switching and control of electrical power.

Solar Power

Language: DE, EN, ES
Learning Time: 9 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Covers the production of electrical energy from solar power, with emphasis on the use and operation of photovoltaic panels.


FESTO

Electric Power Technology

eLab Courses

Wind Power Systems

Language: EN, DE
Learning Time: 4 hours
Equipment: TP 8012/5/6 EMS Europe
Covers the basic principles of wind power systems, i.e., systems that convert wind power into electric power which can be used to power electrical equipment or feed the local ac power network.

Introduction to Wind Power

Language: EN, DE
Learning Time: 7 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
This course teaches the basic concepts of wind power.

Wind Turbine New

Language: EN
Learning Time: 3 hours
Equipment: PLC Applications
Covers the principles of electromechanical systems using Wind Turbine using a PLC.

Hydrogen Fuel Cell

Language: EN, FR
Learning Time: 18 hours
Equipment: EMS 0.2 kW
Provides experiments using the hy-Expert™ fuel cell system by Heliocentris, in conjunction with Festo Didactic equipment.

Lead-Acid Batteries

Language: EN
Learning Time: 5 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Teaches the operation of lead-acid batteries, including their charge and discharge characteristics, as well as their most common charging methods.

Electric Power Technology

eLab Courses

Ni-MH Batteries

Language: EN
Learning Time: 7 hours
Equipment: EMS 0.2 kW
Teaches the basic concepts of Ni-MH batteries.

Lithium-Ion Batteries New

Language: EN
Learning Time: 5 hours
Equipment: EMS 0.2 kW
Teaches the operation of lithium-ion batteries, their charge/discharge characteristics and their safe charging/discharging techniques using a battery management system.

Doubly-Fed Induction Generators

Language: EN
Learning Time: 4 hours
Equipment: EMS 0.2 kW
Covers the operation of doubly-fed induction generators, as well as their use in wind turbines.

Diesel Electricity Generation

Language: EN
Learning Time: 12 hours
Equipment: EMS 0.2 kW
Covers the basic concepts of diesel electricity generation.

Hydropower Electricity Generation

Language: EN, FR
Learning Time: 12 hours
Equipment: EMS 0.2 kW
Covers the basic concepts of hydropower electricity generation.




FESTO
WIND TURBINE LOAD RESISTORS
DC 48V LAMPS
4-QUADRANT POWER SUPPLY AND DYNAMOMETER CONTROLLER
DATA ACQUISITION AND CONTROL INTERFACE

Electric Power Technology

eLab Courses

Three-Phase Transformer Banks

Language: EN, DE, FR
Learning Time: 4 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Teaches the basic concepts of three-phase transformer banks: their characteristics, how their windings are connected, and their most common configuration types.

Distribution Transformer Trainer

Language: EN, DE
Learning Time: 2 hours
Equipment: Distribution Transformer Trainer
Guides students through different sections of an exercise that can be carried out with the Distribution Transformer Trainer.

Directional Protection

Language: EN, DE
Learning Time: 9 hours
Equipment: Numerical Protective Relays Training System
Covers the operation of directional protective relays.

Differential Protection

Language: EN
Learning Time: 6 hours
Equipment: Numerical Protective Relays Training System
Covers the operation of differential protective relays.

Overcurrent and Overload Protection Using Protective Relays

Language: EN, DE
Learning Time: 10 hours
Equipment: Numerical Protective Relays Training System
Covers the operation of overcurrent and overload protective relays.

Electric Power Technology

eLab Courses

Distance Protection

Language: EN, DE
Learning Time: 10 hours
Equipment: Numerical Protective Relays Training System
Covers the operation of distance protective relays.

Power Factor Correction

Language: EN, FR
Learning Time: 3 hours
Equipment: EMS 0.2 kW, TP 8012/5/6 EMS Europe
Teaches the basic concepts of power factor correction, both in electrical substation and in large industrial applications.

Automatic Power Factor Correction Systems

Language: EN
Learning Time: 10 hours
Equipment: EMS 0.2 kW
Covers the installation, commissioning, operation, and programming of automatic power factor correction (APFC) systems.

AC/DC Motors and Generators

Language: EN, ES
Learning Time: 24 hours
Equipment: Computer-Assisted 0.2 kW Electromechanical Training System
Provides a foundation for the further study of rotating machines using the Computer-Assisted 0.2 kW Electromechanical Training System.

Dissectible Machines

Language: EN
Learning Time: 7 hours
Equipment: Computer-Assisted 0.2 kW Electromechanical Training System
Covers the assembly and disassembly of various dc and ac motors.

Electric Power Technology

eLab Courses

Motor Winding Kit

Language: EN, DE
Learning Time: 9 hours
Equipment: Computer-Assisted 0.2 kW Electromechanical Training System
Covers the winding and unwinding of various ac motors.

Electric Vehicle Charging Stations – Legacy version

Language: EN, DE, FR
Learning Time: 8 hours
Equipment: Electric Vehicle Charging Stations – Legacy version
Covers the the operation, standards, and regulation of electric vehicle charging stations that provide single-phase Mode 1 charging and three-phase Mode 3 charging up to 22 kW.

Smart Grid

Language: EN
Learning Time: 5 hours
Equipment: EMS 0.2 kW
Covers the basic principles of smart grids, including their installation and operation.

Microgrid New

Language: EN
Learning Time: 7 hours
Equipment: EMS 0.2 kW
Outlines procedures to perform for the study of microgrids.

High-Frequency Power Transformers

Language: EN, DE
Learning Time: 2 hours
Equipment: EMS 0.2 kW
Covers the operating principles of high-frequency power transformers.

Electric Power Technology

eLab Courses

Basic Motor Controls – 8036 Series

Language: EN
Learning Time: 18 hours
Equipment: Industrial Controls Learning Systems
Provides a foundation for further study in the industrial control branch of knowledge.

Basic Motor Controls – 8036 Series Add-On to EMS

Language: EN
Learning Time: 18 hours
Equipment: Industrial Controls Learning Systems
Provides a foundation for further study in the industrial control branch of knowledge.

Sensors – 8036 Series

Language: EN
Learning Time: 5 hours
Equipment: Industrial Controls Learning Systems
Covers the design and operation of the most common types of sensors in the industrial control branch of knowledge.

Motor Drives – 8036 Series

Language: EN
Learning Time: 8 hours
Equipment: Industrial Controls Learning Systems
Provides the knowledge necessary to perform motor controls with the help of motor drives.

Motor Drives – 8036 Series Stand-Alone

Language: EN
Learning Time: 7 hours
Equipment: Industrial Controls Learning Systems
Provides the knowledge necessary to perform motor controls with the help of motor drives.

Electric Power Technology

eLab Courses

Motor Drives – 8036 Series Add-On to EMS

Language: EN
Learning Time: 6 hours
Equipment: Industrial Controls Learning Systems
Provides the knowledge necessary to perform motor controls with the help of motor drives. This course is intended as an add-on to the Electromechanical System (EMS).

Programmable Logic Controller – 8036 Series (new PLC)

Language: EN
Learning Time: 7 hours
Equipment: Industrial Controls Learning Systems
Provides the knowledge necessary to realize motor controls with the help of a PLC. This course is designed to be performed with the Programmable Logic Controller, variant 3128-1 (EASY-E4-UC-12RC1 from Eaton).

Programmable Logic Controller – 8036 Series

Language: EN
Learning Time: 7 hours
Equipment: Industrial Controls Learning Systems
Provides the knowledge necessary to realize motor controls with the help of a PLC. This course is designed to be performed with the Programmable Logic Controller, variant 3128 (EASY 512-DC-R from Moeller).

Troubleshooting Industrial Controls

Language: EN
Learning Time: 4 hours
Equipment: Industrial Controls Learning Systems
Introduces methods to develop skills in troubleshooting industrial control circuits.

Electric Power Technology

eLab Courses



Electromechanical Systems Using DC Motors New

Language: EN
Learning Time: 3 hours
Equipment: PLC Applications
Covers the principles of electromechanical systems using DC motors using a PLC.

Electric Power Technology

eLab Courses

Motor Control Using Variable-Frequency Drives

Language: EN, ES
Learning Time: 10 hours
Equipment: Variable-Frequency Drives Training System
Covers the basic principles of variable-frequency drives and their operation.

Level Process Control New

Language: EN
Learning Time: 3 hours
Equipment: PLC Applications
Covers the principles of level process control using a PLC.

MPS PA Compact Fundamentals of Closed-Loop Control

Language: EN
Learning Time: 13 hours
Equipment: MPS PA
Covers the fundamentals of closed-loop control. This course is designed to be performed with the Programmable Logic Controller, variant 3128 (EASY 512-DC-R from Moeller)."

PLC and HMI Programming – Siemens S7-1200 PLC

Language: EN, ES
Learning Time: 14 hours
Equipment: PLC and HMI Training System
Covers the basic principles of PLC programming using the Siemens S7-1200 PLC with the TIA Portal software from Siemens. Also covers the development of HMIs.

PLC and HMI Programming – CompactLogix AB PLC New

Language: EN
Learning Time: 12 hours
Equipment: Advanced PLC Training System (Rockwell Automation)
Covers the basic principles of PLC programming using the CompactLogix AB PLC with the Studio 5000 and FactoryTalk View Studio software from Rockwell. Also covers the development of HMIs.

Electric Power Technology

eLab Courses

Stepper Motor Control New

Language: DE, EN, FR
Learning Time: 23 hours
Equipment: Equipment set TP 1421-1423: Stepper and Servo Motor Control
Covers the installation, wiring, and commissioning of a stepper motor control installation.

Servo Motor Control New

Language: DE, EN, FR
Learning Time: 23 hours
Equipment: TP 1421-1423: Stepper and Servo Motor Control
Covers the installation, wiring, and commissioning of a servo motor control system.

Stepper and Servo Motor Control New

Language: DE, EN, FR, SK
Learning Time: 24 hours
Equipment: TP 1421-1423: Stepper and Servo Motor Control
Covers the installation, wiring, and commissioning of a stepper and servo motor control system.

Electro-Pneumatics New

Language: EN
Learning Time: 3 hours
Equipment: PLC Applications
Covers the principles of electromechanical systems using Electro-Pneumatics using a PLC.

High-Power LEDs

Language: EN, DE
Learning Time: 3 hours
Equipment: High-power LED EduTrainer
Covers the basic principles of high-power LEDs using the TP 1144.

Electric Power Technology

eLab Courses

Traffic Lights

Language: EN
Learning Time: 2 hours
Equipment: PLC Applications
Covers the principles of electromechanical systems using Traffic Lights using a PLC.



Electric Power Technology

eTheory

Industrial Safety in the Workplace

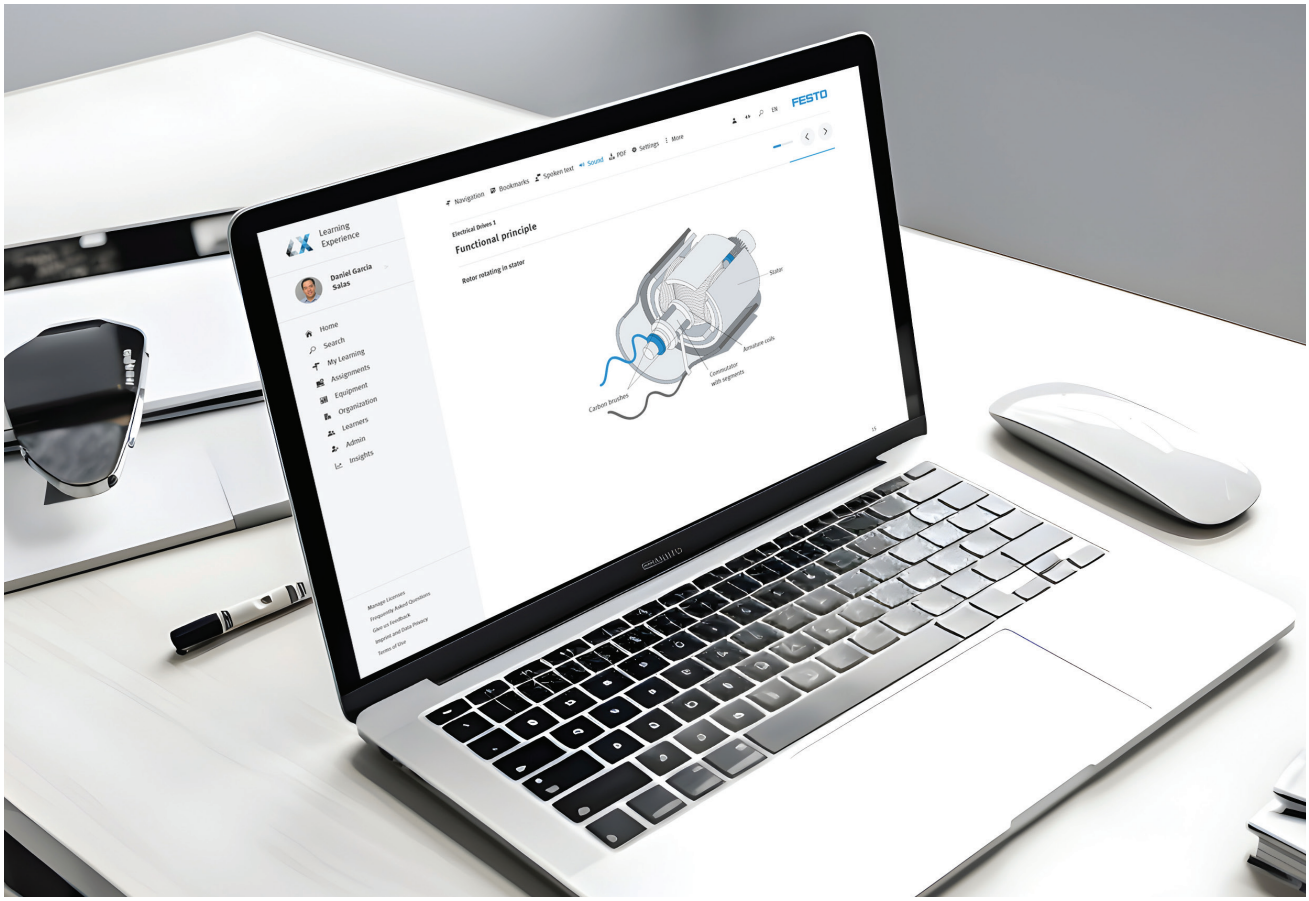
Language: EN, ES, ZH
Learning Time: 12 hours

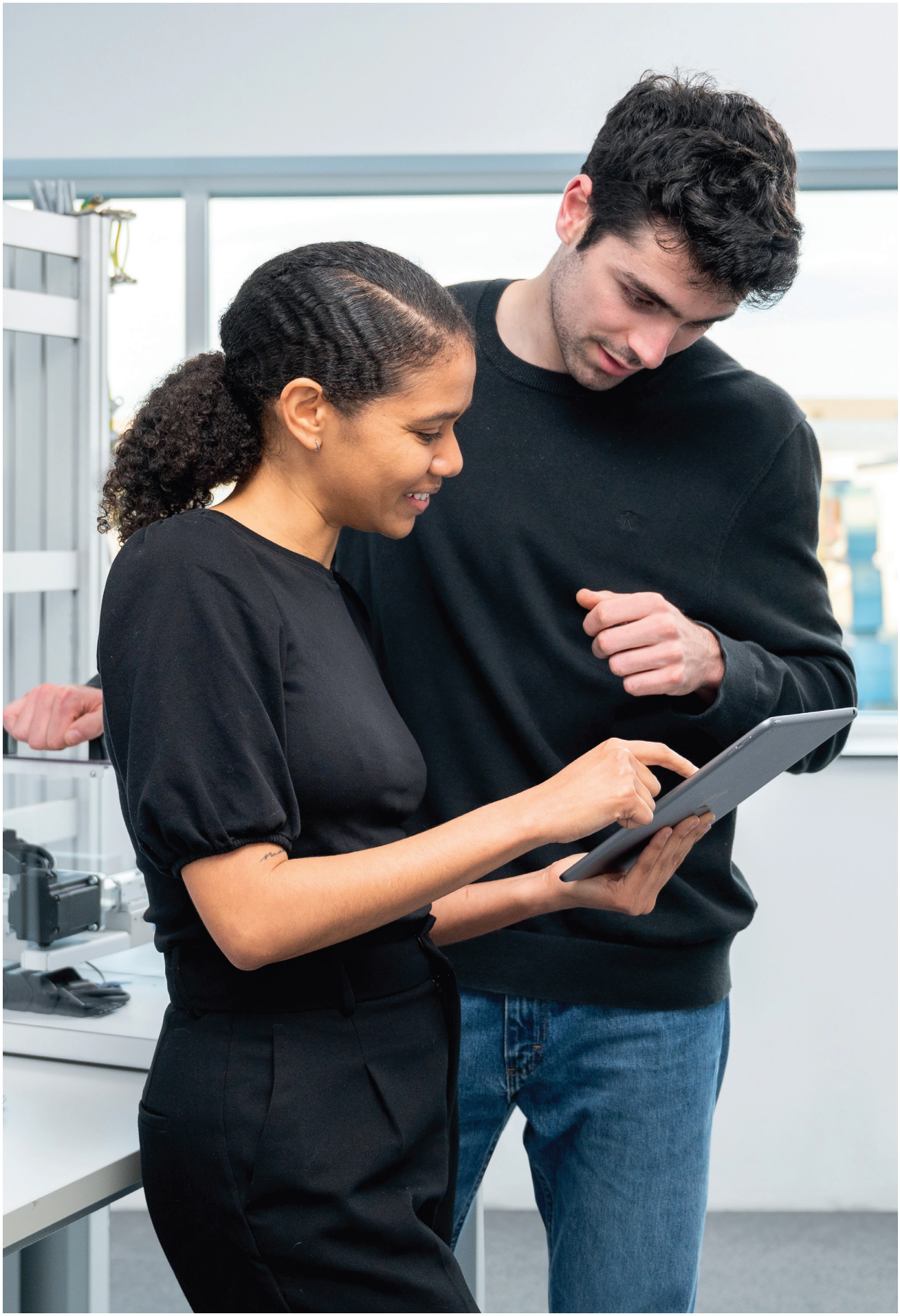
Covers the basic principles of safety in an industrial workplace setting.

Speed Control of Three-Phase Asynchronous Motors with Frequency Converters

Language: DE, EN
Learning Time: 30 minutes

Covers the speed control of three-phase asynchronous motors with frequency converters.





Electric Power Technology

Evaluations

DC Circuit Fundamentals

Language: EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: DC Circuit Fundamentals

AC Circuit Fundamentals

Language: EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: AC Circuit Fundamentals

Single-Phase AC Power Circuits

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Single-Phase AC Power Circuits

Single-Phase Power Transformer

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Single-Phase Power Transformer

AC/DC Motors and Generators

Language: EN, ES

This evaluation gives you the opportunity to measure your knowledge on the following topic: AC/DC Motors and Generators

Electric Power Technology

Evaluations

AC/DC Motors and Generators

Language: EN, ES

This evaluation gives you the opportunity to measure your knowledge on the following topic: AC/DC Motors and Generators

Automatic Power Factor Correction Systems

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Automatic Power Factor Correction Systems

Conventional DC Machines and Universal Motor

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Conventional DC Machines and Universal Motor

DC Power Circuits

Language: EN, DE, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: DC Power Circuits

Diesel Electricity Generation

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Diesel Electricity Generation

Electric Power Technology

Evaluations



Differential Protection New

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Differential Protection English

Directional Protection New

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Directional Protection

Electric Power Technology

Evaluations

Distance Protection New

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Distance Protection

Hydropower Electricity Generation

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Hydropower Electricity Generation

Lead-Acid Batteries New

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Lead-Acid Batteries

Lithium-Ion Batteries New

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Lithium-Ion Batteries

Overcurrent and Overload Protection Using Protective Relays New

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Overcurrent and Overload Protection Using Protective Relays

Electric Power Technology

Evaluations

Permanent Magnet DC Machines

Language: EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Permanent Magnet DC Machines

Photovoltaic Systems New

Language: EN, DE

This evaluation gives you the opportunity to measure your knowledge on the following topic: Photovoltaic Systems

Power Circuits and Transformers

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Power Circuits and Transformers

Power Factor Correction

Language: EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Power Factor Correction

Smart Grid

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Smart Grid

Electric Power Technology

Evaluations

Solar Power

Language: EN, DE, ES

This evaluation gives you the opportunity to measure your knowledge on the following topic: Solar Power

Three-Phase Rotating Machines

Language: EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Three-Phase Rotating Machines

Three-Phase AC Power Circuits

Language: EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Three-Phase AC Power Circuits



Electric Power Technology

Evaluations

Three-Phase Transformer Banks

Language: EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Three-Phase Transformer Banks

Basic Motor Control Technology

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basic Motor Control Technology

Basic Motor Controls – 8036 Series New

Language: EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basic Motor Controls



Electric Power Technology

Evaluations

Motor Drives – 8036 Series New

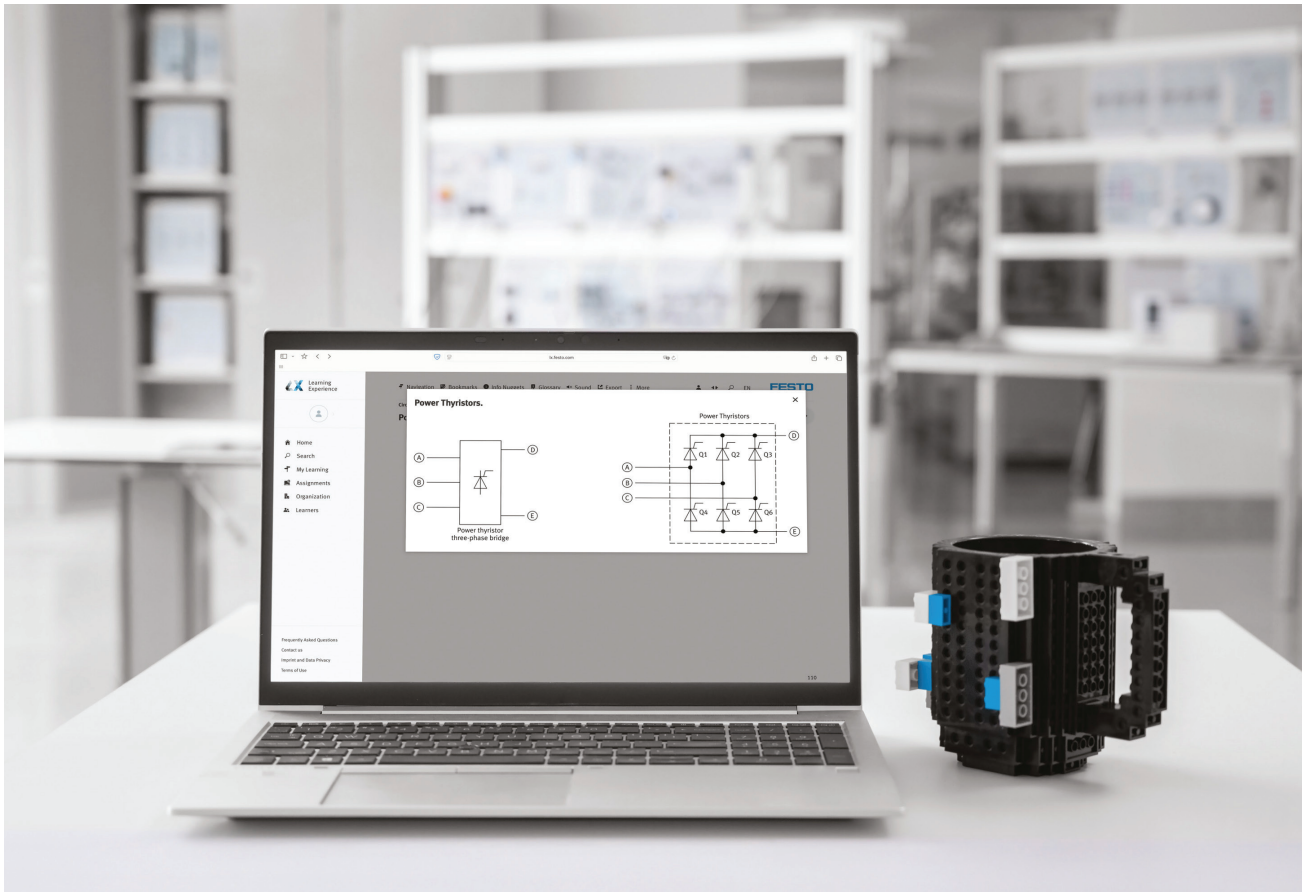
Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Motor Drives – 8036 Series

Programmable Logic Controller – 8036 Series New

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Programmable Logic Controller – 8036 Series



Electric Power Technology

Evaluations

Basics of Electromagnetic Switching Devices

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of Electromagnetic Switching Devices

Industrial Safety in the Workplace

Language: EN, ES, ZH

This evaluation gives you the opportunity to measure your knowledge on the following topic: Industrial Safety in the Workplace

Servo Motor Control New

Language: EN, DE

This evaluation gives you the opportunity to measure your knowledge on the following topic: Servo Motor Control

Stepper Motor Control New

Language: DE, EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Stepper Motor Control

Stepper and Servo Motor Control New

Language: DE, EN, FR, SK

This evaluation gives you the opportunity to measure your knowledge on the following topic: Stepper and Servo Motor Control

Electric Power Technology

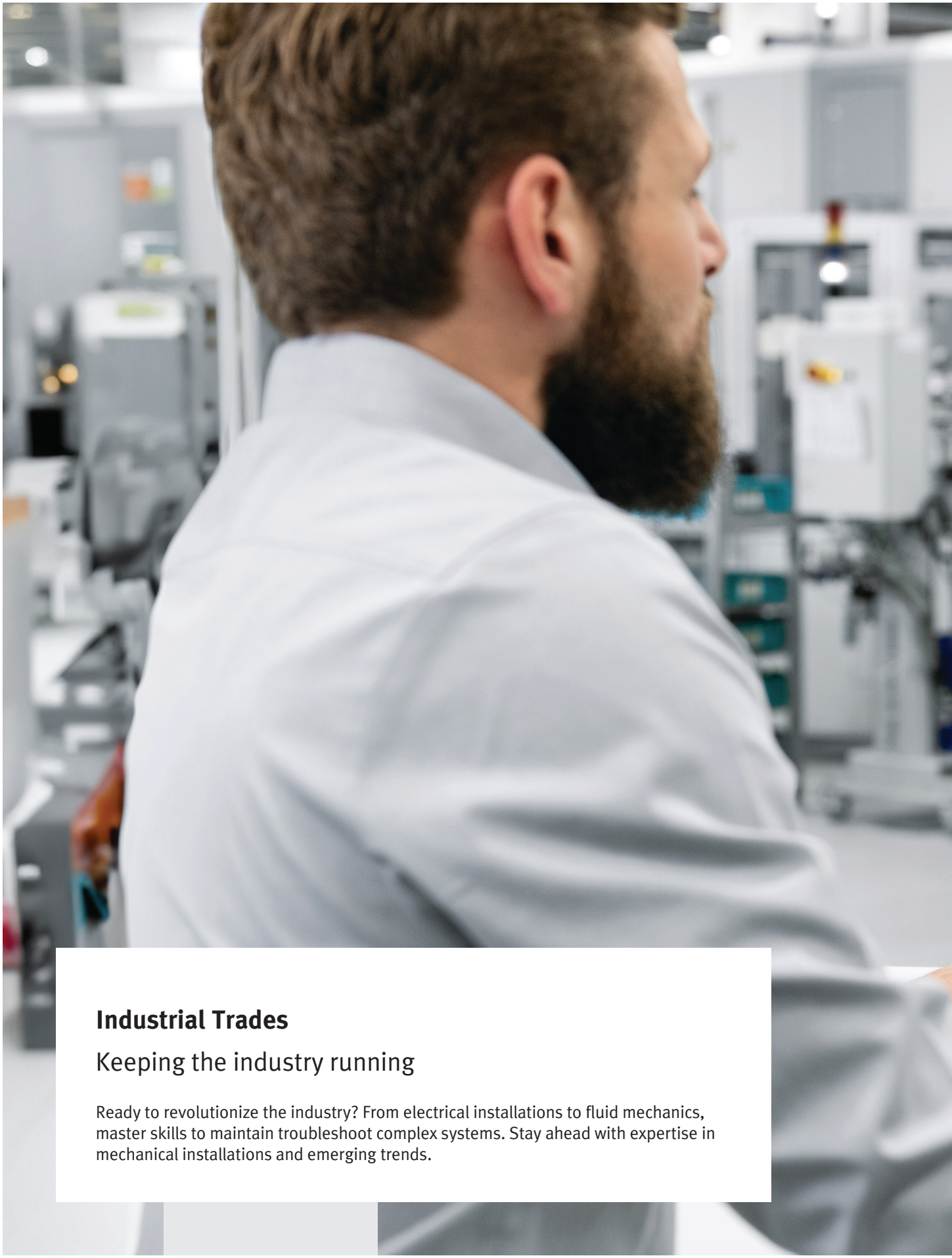
Evaluations

Wiring and Control of an AC Motor

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Wiring and Control of an AC Motor.





Industrial Trades

Keeping the industry running

Ready to revolutionize the industry? From electrical installations to fluid mechanics, master skills to maintain troubleshoot complex systems. Stay ahead with expertise in mechanical installations and emerging trends.


EN
FESTO
Structure
5 Learning Units
Fundamentals of ISO Geometrical Product Specifications
01 min
Learning Unit 1: Linear Sizes
06 min
Learning Unit 2: GPS Basic Standards
23 min
Learning Unit 3: Line profile and surface profile
12 min
Course Summary
Fundamentals of ISO Geometrical Product Specifications
Version 1
Module 1 in the series of learning program on ISO Geometrical Product Specification (ISO/GPS) - size, form and location. Learn the basic principles of the ISO/GPS system including its industrial applications.
Learning time: 45 minutes
Difficulty: Beginner
Language: English, more
Category:
eLearning course
Public
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Add to Favorites
View Content
Edit the Course
Show Structure

Industrial Trades

eLearning Courses

Fundamentals of ISO Geometrical Product Specifications

Language: EN, DE

Learning Time: 45 minutes

Module 1 in the series of learning program on ISO Geometrical Product Specification (ISO/GPS) - size, form and location. Learn the basic principles of the ISO/GPS system including its industrial applications. This learning program has been jointly developed by Festo Didactic SE and Mahr GmbH.

Dimensional Tolerancing According to ISO 14405

Language: EN, DE

Learning Time: 1 hour

Module 2 in the series of learning program on ISO Geometrical Product Specification (ISO/GPS) - size, form and location. Learn about sizes according to ISO 14405 and the specification modifiers that describe those unambiguously. This learning program has been jointly developed by Festo Didactic SE and Mahr GmbH.

Form Tolerances According to ISO 1101

Language: EN, DE

Learning Time: 2 hours

Module 3 in the series of learning program on ISO Geometrical Product Specification (ISO/GPS) - size, form and location. Learn about the specification and verification of form deviations according to ISO 1101. This learning program has been jointly developed by Festo Didactic SE and Mahr GmbH.

Datums, Orientation, Location and Run-out

Language: EN, DE, PT

Learning Time: 2 hours

Module 4 in the series of learning program on ISO Geometrical Product Specification (ISO/GPS) - size, form and location. Learn about datums and all tolerances which includes datums. This learning program has been jointly developed by Festo Didactic SE and Mahr GmbH.

Material Conditions According to ISO 2692

Language: EN, DE

Learning Time: 1 hour

Module 5 in the series of learning program on ISO Geometrical Product Specification (ISO/GPS) - size, form and location. Learn about the cases when it is not reasonable to use independency principle. This learning program has been jointly developed by Festo Didactic SE and Mahr GmbH.

Industrial Trades

eLearning Courses

Standards for Zones, Edges and Measurement Uncertainties

Language: EN, DE

Learning Time: 1 hour

Module 6 in the series of learning program on ISO Geometrical Product Specification (ISO/GPS) - size, form and location. Learn how to handle measurement uncertainties, zones and edges. This learning program has been jointly developed by Festo Didactic SE and Mahr GmbH.

Compendium | ISO Geometrical Product Specification – Size, Form and Location

Language: EN, DE

Learning Time: 2 hours

Module 7 in the series of learning program on ISO Geometrical Product Specification (ISO/GPS) - size, form and location. The compendium contains not only the most important points to remember of the previous modules, but also application-oriented questions to challenge your knowledge. This learning program has been jointly developed by Festo Didactic SE and Mahr GmbH.

Fundamentals of Surface Texture

Language: EN, DE

Learning Time: 1 hour

Module 1 in the series of learning program on ISO Geometrical Product Specification (ISO/GPS) - Surface. Learn the basic principles of the ISO/GPS system including its industrial applications. This learning program has been jointly developed by Festo Didactic SE and Mahr GmbH.

Indication of Surface Texture

Language: EN, DE

Learning Time: 1 hour

Module 2 in the series of learning programs on ISO Geometrical Product Specification (ISO/GPS) - Surfaces. Learn the different parameters and how to define and understand the surface specifications in the technical drawing. This learning program has been jointly developed by Festo Didactic SE and Mahr GmbH.

Measurement Strategies of Surface Texture

Language: EN, DE

Learning Time: 1 hour

Module 3 in the series of learning program on ISO Geometrical Product Specification (ISO/GPS) - Surfaces. Learn about the measurement devices and strategies for precise measurement of surface texture. This learning program has been jointly developed by Festo Didactic SE and Mahr GmbH.

Industrial Trades

eLearning Courses

Fundamentals of Surface Texture New

Language: EN, DE

Learning Time: 1 hour

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Energy Efficiency in Compressed Air Technology and Pneumatics New

Language: EN, DE, PT

Learning Time: 2 hours

Welcome to the eLearning course “Energy Efficiency in Compressed Air Technology and Pneumatics”. This course is devided into 6 learning units. It is recommended to work on them in the given order.


Surface Characteristics
Parameters Overview
EN
FESTO
Primary Profile
• Total height (Pt)
• Mean profile element spacing (Psm)
Waviness Profile
• Total height (Wt)
• Mean profile element spacing (Wsm)
Roughness Profile
• Total height (Rt)
• Mean profile element spacing (Rsm)
Good to know
The first letter of the parameter indicates the profile from which the parameter is calculated, for example Wt derives from Waviness profile.
Action
Click on the titles to play again the corresponding video chapter.

Industrial Trades

eLab Courses

Dimensional Metrology – Semi-Precision Measurement

Language: DE, EN, ES, FR
Learning Time: 14 hours
Equipment: TP 47220/47221: Basic Dimensional Metrology
Covers fundamental concepts related to dimensional metrology. It also covers the proper use, reading, field check and care of semi-precision measuring instruments.

Dimensional Metrology – Precision Measurement

Language: DE, EN, ES, FR, PT
Learning Time: 16 hours
Equipment: TP 47220/47221: Basic Dimensional Metrology
Covers the proper use, reading, field check, and care of precision measuring instruments used for dimensional measurement.

Dimensional Metrology – Advanced Measurement

Language: DE, EN, FR
Learning Time: 18 hours
Equipment: TP 47222/47223: Geometric Dimensioning and Tolerancing
Covers the proper use of precision measuring instruments used for dimensional measurement and notions of geometric tolerancing for validation purposes.

Statistical Process Control

Language: EN
Learning Time: 14 hours
Equipment: TP 47224: Statistical Process Control
This course presents some statistical tools used in the industry to control and improve the quality of products.



Industrial Trades

eLab Courses

Industrial Wiring

Language: EN
Learning Time: 38 hours
Equipment: Industrial Wiring Training System
Covers the assembly, installation, startup, maintenance, and troubleshooting of electrical wiring systems for industrial applications.

Enclosures and Conduits – Industrial Wiring

Language: EN
Learning Time: 4 hours
Equipment: Industrial Wiring Training System (Legacy Version)
Provides a systematic and realistic means of learning how to install enclosures and conduits using the Industrial Wiring Learning System.

Electrical Wiring

Language: EN
Learning Time: 5 hours
Equipment: Industrial Wiring Training System (Legacy Version)
Provides a systematic and realistic means of learning how to install and wire electrical equipment in accordance with the National Electrical Code (NEC).

Electrical Power Distribution – Industrial Wiring

Language: EN
Learning Time: 3 hours
Equipment: Industrial Wiring Training System (Legacy Version)
Provides a systematic and realistic means of learning how to distribute electrical power using the Industrial Wiring Training System.

Three-Phase Motor Starters – Industrial Wiring

Language: EN
Learning Time: 2 hours
Equipment: Industrial Wiring Training System (Legacy Version)
Provides a systematic and realistic means of learning how to install and wire three-phase motor starters using the Industrial Wiring Training System.

Industrial Trades

eLab Courses

AC Motor Drive – Industrial Wiring

Language: EN, DE
Learning Time: 1 hours
Equipment: Industrial Wiring Training System (Legacy Version)
Provides a systematic and realistic means of learning how to install and wire ac motor drives using the Industrial Wiring Training System.

DC Motor Drive – Industrial Wiring

Language: EN
Learning Time: 1 hours
Equipment: Industrial Wiring Training System (Legacy Version)
Provides a systematic and realistic means of learning how to install and wire dc motor drives using the Industrial Wiring Training System.

Conventional Fire Alarm System

Language: EN
Learning Time: 4 hours
Equipment: Conventional Fire Alarm Learning System
Provides a systematic and realistic means of learning how to install and program a conventional fire alarm system.

Addressable Fire Alarm System

Language: EN
Learning Time: 8 hours
Equipment: Addressable Fire Alarm Learning System
Outlines procedures to perform for the study of microgrids.



Industrial Trades

eLab Courses

Introduction to Mechanical Drive Systems

Language: DE, EN, ES, FI, FR, NL
Learning Time: 6 hours
Equipment: Mechanical Drives Learning System
Covers the basics of mechanical drives through theory presentations and hands-on manipulations using the Mechanical Drives Training System.

Belt Drives 1

Language: DE, EN, FI, FR, NL, PL
Learning Time: 5 hours
Equipment: Mechanical Drives Learning System
Covers the basics of belt drives through theory presentations and hands-on manipulations using the Mechanical Drives Training System.

Chain Drives 1

Language: DE, EN, FI, FR, NL, PL
Learning Time: 6 hours
Equipment: Mechanical Drives Learning System
Covers the basics of chain drives through theory presentations and hands-on manipulations using the Mechanical Drives Training System.

Gear Drives 1

Language: DE, EN, FI, FR, NL, PL
Learning Time: 9 hours
Equipment: Mechanical Drives Learning System
Covers the basics of gear drives through theory presentations and hands-on manipulations using the Mechanical Drives Training System.

Bearings and Seals

Language: DE, EN, NL, PL
Learning Time: 9 hours
Equipment: Mechanical Drives Learning System
Covers the basics of bearings and seals through theory presentations and hands-on manipulations using the Mechanical Drives Training System.

Industrial Trades

eLab Courses

Shaft Alignment and Couplings

Language: DE, EN, NL, PL
Learning Time: 11 hours
Equipment: Mechanical Drives Learning System
Covers the basics of four shaft alignment methods and six types of couplings. This is achieved through theory presentations and hands-on manipulations using the Mechanical Drives Training System.

Ball Screws and Linear Bearings

Language: DE, EN, NL
Learning Time: 4 hours
Equipment: Mechanical Drives Learning System
Covers the basics of ball screw and linear bearings through theory presentations and hands-on manipulations using the Mechanical Drives Training System.

Clutches and brakes

Language: DE, EN, NL
Learning Time: 5 hours
Equipment: Mechanical Drives Learning System
Covers the basics of clutches and brakes through theory presentations and hands-on manipulations using the Mechanical Drives Training System.

Belt Drives 2

Language: DE, EN, FI, FR, NL, PL
Learning Time: 9 hours
Equipment: Mechanical Drives Learning System
Covers the operating principles of V-belt drives, idler pulleys, variable-speed belt drives, multiple-speed belt drives, multiple-belt drives, synchronous belt drives and high-torque synchronous belt drives.

Chain Drives 2

Language: DE, EN, FI, FR, NL, PL
Learning Time: 4 hours
Equipment: Mechanical Drives Learning System
Covers the operating principles of multiple-strands chain drives and idler sprockets. This is achieved through theory presentations and hands-on manipulations using the Mechanical Drives Training System.

Industrial Trades

eLab Courses

Gear Drives 2

Language: DE, EN, FI, FR, NL, PL
Learning Time: 5 hours
Equipment: Mechanical Drives Learning System

Covers the operating principles of helical gears, worms and worm gears, miter gears, and gearboxes. This is achieved through theory presentations and hands-on manipulations using the Mechanical Drives Training System.

Vibration Metering

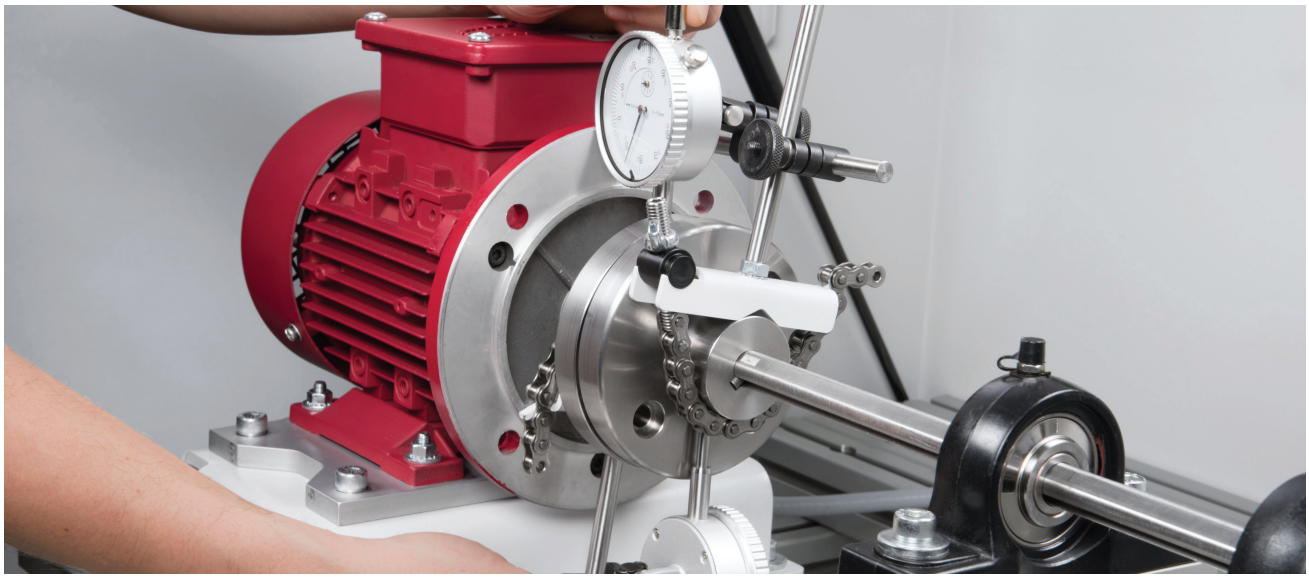
Language: DE, EN
Learning Time: 6 hours
Equipment: Mechanical Drives Learning System

Covers the basics of vibration metering through theory presentations and hands-on manipulations using the Mechanical Drives Training System.

Vibration Analysis

Language: DE, EN
Learning Time: 9 hours
Equipment: Mechanical Drives Learning System

Covers the basics of vibration analysis through theory presentations and hands-on manipulations using the Mechanical Drives Training System.



Industrial Trades

eLab Courses

Introduction to Mechanical Drive Systems – Legacy Version

Language: EN
Learning Time: 4 hours
Equipment: Mechanical Drives Learning System (Legacy Version)
Covers the basics of mechanical drives. This legacy version of the course is designed for users of the Mechanical Training System, Version 46101.

Belt Drives 1 – Legacy Version

Language: EN
Learning Time: 3 hours
Equipment: Mechanical Drives Learning System (Legacy Version)
Covers the basic principles of belt drives. This legacy version of the course is designed for users of the Mechanical Training System, Version 46101.

Belt Drives 2 – Legacy Version

Language: EN
Learning Time: 4 hours
Equipment: Mechanical Drives Learning System (Legacy Version)
Covers additional principles of belt drives, following those covered in Belt Drives 1 – Legacy Version. This legacy version of the course is designed for users of the Mechanical Training System, Version 46101.

Chain Drives 1 – Legacy Version

Language: EN
Learning Time: 3 hours
Equipment: Mechanical Drives Learning System (Legacy Version)
Covers the basic principles of chain drives. This legacy version of the course is designed for users of the Mechanical Training System, Version 46101.

Chain Drives 2 – Legacy Version

Language: EN
Learning Time: 2 hours
Equipment: Mechanical Drives Learning System (Legacy Version)
Covers additional principles of chain drives, following those covered in Chain Drives 1 – Legacy Version. This legacy version of the course is designed for users of the Mechanical Training System, Version 46101.

Industrial Trades

eLab Courses

Gear Drives 1 – Legacy Version

Language: EN
Learning Time: 3 hours
Equipment: Mechanical Drives Learning System (Legacy Version)
Covers the basic principles of gear drives. This legacy version of the course is designed for users of the Mechanical Training System, Version 46101.

Gear Drives 2 – Legacy Version

Language: EN
Learning Time: 2 hours
Equipment: Mechanical Drives Learning System (Legacy Version)
Covers additional principles of gear drives, following those covered in Gear Drives 1. This legacy version of the course is designed for users of the Mechanical Training System, Version 46101.

Bearings – Legacy Version

Language: EN
Learning Time: 2 hours
Equipment: Mechanical Drives Learning System (Legacy Version)
Covers the design and operation of the most common types of bearings. This legacy version of the course is designed for users of the Mechanical Training System, Version 46101.

Gaskets and Seals – Legacy Version

Language: EN
Learning Time: 1 hours
Equipment: Mechanical Drives Learning System (Legacy Version)
Covers the design and operation of the most common types of gaskets and seals. This legacy version of the course is designed for users of the Mechanical Training System, Version 46101.

Alignment and Couplings – Legacy Version

Language: EN
Learning Time: 6 hours
Equipment: Mechanical Drives Learning System (Legacy Version)
Covers the design and operation of the most common types of alignments and couplings. This legacy version of the course is designed for users of the Mechanical Training System, Version 46101.

Industrial Trades

eLab Courses

Ball Screws and Linear Bearings – Legacy Version

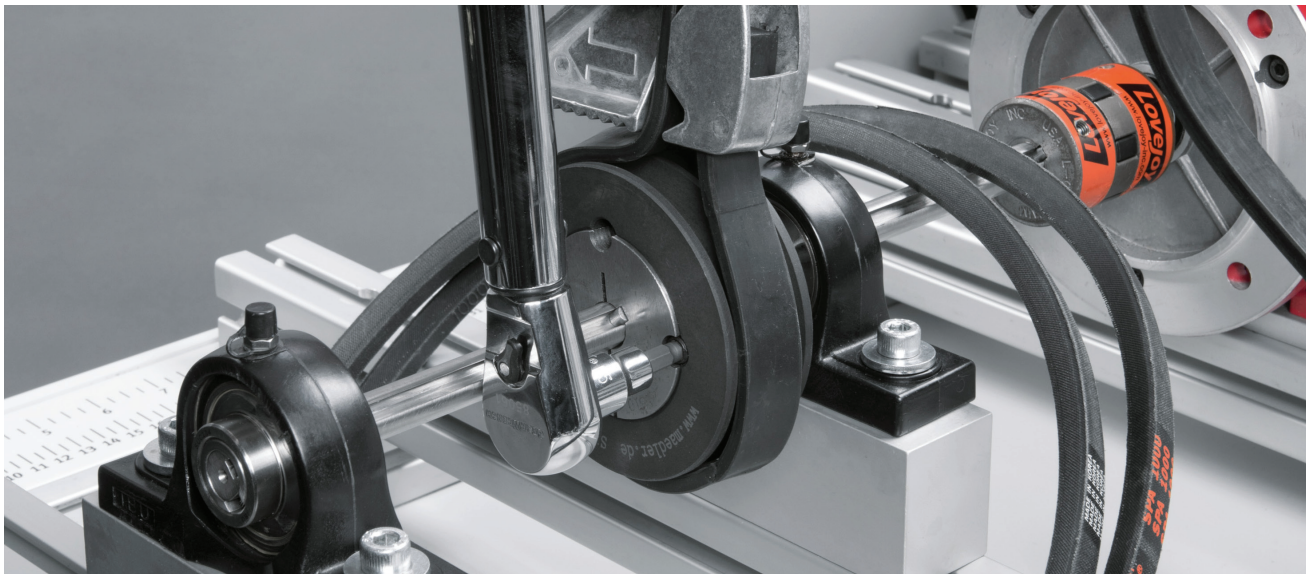
Language: EN
Learning Time: 2 hours
Equipment: Mechanical Drives Learning System (Legacy Version)
Covers the operating principles of ball screws and linear bearings. This legacy version of the course is designed for users of the Mechanical Training System, Version 46101.

Clutches and Brakes – Legacy Version

Language: EN
Learning Time: 2 hours
Equipment: Mechanical Drives Learning System (Legacy Version)
Covers the operating principles of clutches and brakes. This legacy version of the course is designed for users of the Mechanical Training System, Version 46101.

Lubrication – Legacy Version

Language: EN
Learning Time: 2 hours
Equipment: Mechanical Drives Learning System (Legacy Version)
Covers the principles of lubrication. This legacy version of the course is designed for users of the Mechanical Training System, Version 46101.







Industrial Trades

eLab Courses

Single-Pump Systems

Language: EN, FR
Learning Time: 12 hours
Equipment: Industrial Pump Learning System
Covers the basic principles of single-pump system maintenance and operation.

Multiple-Pump Systems

Language: EN, FR
Learning Time: 9 hours
Equipment: Industrial Pump Learning System
Covers the basic principles of multiple-pump system maintenance and operation.

External Gear Pumps

Language: EN
Learning Time: 5 hours
Equipment: Industrial Pump Learning System
Covers the maintenance and operation of external gear pumps.

Vane Pump New

Language: EN
Learning Time: 3 hours
Equipment: Industrial Pump Learning System
Covers notions and skills on vane pumps.

Flexible Impeller Pump New

Language: EN
Learning Time: 4 hours
Equipment: Industrial Pump Learning System
Covers notions and skills on flexible impeller pumps.

Industrial Trades

eLab Courses

Progressive Cavity Pump New

Language: EN
Learning Time: 4 hours
Equipment: Industrial Pump Learning System
Covers notions and skills on progressive cavity pumps.

Peristaltic Pump New

Language: EN
Learning Time: 3 hours
Equipment: Industrial Pump Learning System
Covers notions and skills on peristaltic pumps.

Pneumatic Diaphragm Pump New

Language: EN
Learning Time: 4 hours
Equipment: Industrial Pump Learning System
Covers notions and skills on pneumatic diaphragm pumps.

Magnetic Drive Centrifugal Pump New

Language: EN
Learning Time: 3 hours
Equipment: Industrial Pump Learning System
Covers notions and skills on magnetic drive centrifugal pumps.

Multistage Vertical Centrifugal Pump New

Language: EN
Learning Time: 4 hours
Equipment: Industrial Pump Learning System
Covers notions and skills on multistage centrifugal pumps.

Industrial Trades

eLab Courses

Pump Performance

Language: EN, FR
Learning Time: 5 hours
Equipment: Industrial Pump Learning System
Covers more advanced notions and skills on centrifugal pump performance.

Piping Fundamentals

Language: EN
Learning Time: 4 hours
Equipment: Piping Learning System
Covers the basic principles related to the fabrication, installation, and testing of piping circuits, including pipes, tubes, and hoses.

Rigging Basics

Language: EN
Learning Time: 2 hours
Equipment: Rigging Training System
This course provide a systematic and realistic means of learning the rigging technics. You will be introduced to ropes, slings, hitches, cranes, and the hardware associated with rigging.





Industrial Trades

eLab Courses

Single-Pump Systems – Legacy Version

Language: EN, DE
Learning Time: 4 hours
Equipment: Pumps Training System
Provides a systematic and realistic means of learning how to install, use, and perform maintenance on industrial pumps.

Multiple-Pump Systems – Legacy Version

Language: EN
Learning Time: 1 hour
Equipment: Pumps Training System
Provides a systematic and realistic means of learning how to install, use, and perform maintenance on industrial pumps in multiple-pump systems.

External Gear Pump – Legacy Version

Language: EN
Learning Time: 1 hour
Equipment: Pumps Training System
Provides a systematic and realistic means of learning how to install, use, and perform maintenance on external gear pumps.

Vane Pump – Legacy Version

Language: EN
Learning Time: 1 hour
Equipment: Pumps Training System
Provides a systematic and realistic means of learning how to install, use, and perform maintenance on vane pumps.

Flexible Impeller Pump – Legacy Version

Language: EN
Learning Time: 2 hours
Equipment: Pumps Training System
Provides a systematic and realistic means of learning how to install, use, and perform maintenance on flexible impeller pumps.

Industrial Trades

eLab Courses

Progressive Cavity Pump – Legacy Version

Language: EN
Learning Time: 1 hour
Equipment: Pumps Training System
Provides a systematic and realistic means of learning how to install, use, and perform maintenance on progressive cavity pumps.

Peristaltic Pump – Legacy Version

Language: EN
Learning Time: 2 hours
Equipment: Pumps Training System
Provides a systematic and realistic means of learning how to install, use, and perform maintenance on peristaltic pumps.

Pneumatic Diaphragm Pump – Legacy Version

Language: EN
Learning Time: 1 hour
Equipment: Pumps Training System
Provides a systematic and realistic means of learning how to install, use, and perform maintenance on pneumatic diaphragm pumps.

Metering Pump – Legacy Version

Language: EN
Learning Time: 1 hour
Equipment: Pumps Training System
Provides a systematic and realistic means of learning how to install, use, and perform maintenance on metering pumps.

Piston Pump – Legacy Version

Language: EN
Learning Time: 1 hour
Equipment: Pumps Training System
Provides a systematic and realistic means of learning how to install, use, and perform maintenance on piston pumps.

Industrial Trades

eLab Courses

Magnetic-Drive Centrifugal Pump – Legacy Version

Language: EN
Learning Time: 1 hour
Equipment: Pumps Training System
Provides a systematic and realistic means of learning how to install, use, and perform maintenance on magnetic-drive centrifugal pumps.

Stuffing-Box Centrifugal Pump – Legacy Version

Language: EN
Learning Time: 1 hour
Equipment: Pumps Training System
Provides a systematic and realistic means of learning how to install, use, and perform maintenance on stuffing-box centrifugal pumps.

Multi-Stage Vertical Centrifugal Pump – Legacy Version

Language: EN, FR
Learning Time: 2 hours
Equipment: Pumps Training System
Introduces the operating principles of multi-stage vertical centrifugal pumps.



Industrial Trades

Evaluations

Introduction to Mechanical Drives

Language: EN, FI, PL

This evaluation gives you the opportunity to measure your knowledge on the following topic: Introduction to Mechanical Drives

Belt Drives 1

Language: DE, EN, FI, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Belt Drives 1

Belt Drives 2

Language: DE, EN, FI, FR, NL, PL

This evaluation gives you the opportunity to measure your knowledge on the following topic: Belt Drives 2

Chain Drives 1

Language: DE, EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Chain Drives 1

Chain Drives 2

Language: DE, EN, FI, FR, NL, PL
Equipment: FACET

This evaluation gives you the opportunity to measure your knowledge on the following topic: Chain Drives 2

Industrial Trades

Evaluations

Gear Drives 1

Language: DE, EN, FI, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic:

Gear Drives 2

Language: EN, FI, FR, NL

This evaluation gives you the opportunity to measure your knowledge on the following topic: Gear Drives 2

Bearings and Seals

Language: DE, EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Bearings and Seals

Shaft Alignment and Couplings

Language: DE, EN, NL, PL

This evaluation gives you the opportunity to measure your knowledge on the following topic: Shaft Alignment and Couplings

Ball Screws and Linear Bearings

Language: DE, EN, NL

This evaluation gives you the opportunity to measure your knowledge on the following topic: Ball Screws and Linear Bearings

Industrial Trades

Evaluations

Clutches and brakes

Language: DE, EN, NL

This evaluation gives you the opportunity to measure your knowledge on the following topic: Clutches and brakes

Vibration Metering

Language: DE, EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Vibration Metering

Vibration Analysis

Language: DE, EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Vibration Analysis

Introduction to Mechanical Drive Systems – Legacy Version

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Introduction to Mechanical Drive Systems – Legacy Version

Industrial Trades

Evaluations

Belt Drives 1 – Legacy Version

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Belt Drives 1 – Legacy Version

Belt Drives 2 – Legacy Version

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Belt Drives 2 – Legacy Version

Chain Drives 1 – Legacy Version

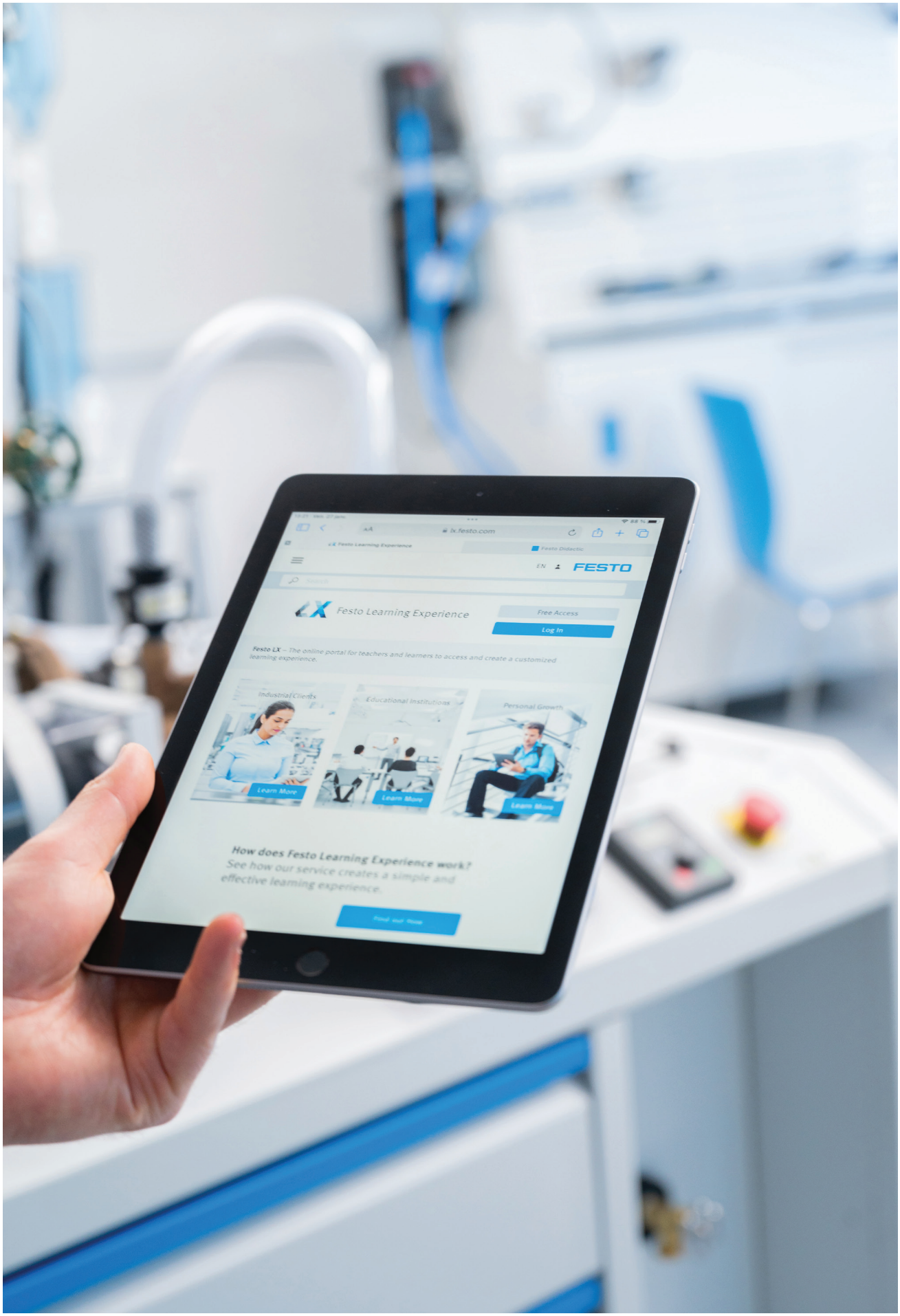
Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Chain Drives 1 – Legacy Version

Chain Drives 2 – Legacy Version

Language: DE, EN, NL, PL

This evaluation gives you the opportunity to measure your knowledge on the following topic: Chain Drives 2 – Legacy Version


lx.festo.com
FESTO
Festo Learning Experience
Free Access
Log In
Festo LX – The online portal for teachers and learners to access and create a customized learning experience.
Industrial Clients
Educational Institutions
Personal Growth
Learn More
Learn More
Learn More
How does Festo Learning Experience work?
See how our service creates a simple and effective learning experience.

Industrial Trades

Evaluations

Gear Drives 1 – Legacy Version

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Gear Drives 1 – Legacy Version

Gear Drives 2 – Legacy Version

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Gear Drives 2 – Legacy Version

Bearings – Legacy Version

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Bearings – Legacy Version

Clutches and Brakes – Legacy Version

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Clutches and Brakes – Legacy Version

Alignment and Couplings – Legacy Version

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Alignment and Couplings – Legacy Version

Industrial Trades

Evaluations

Ball Screws and Linear Bearings – Legacy Version

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Ball Screws and Linear Bearings – Legacy Version

Gaskets and Seals – Legacy Version

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Gaskets and Seals – Legacy Version

Lubrication – Legacy Version

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Lubrication – Legacy Version

Dimensional Metrology – Semi-Precision Measurement

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Dimensional Metrology – Semi-Precision Measurement

Dimensional Metrology – Precision Measurement

Language: DE, EN, ES, FR, PT

This evaluation gives you the opportunity to measure your knowledge on the following topic: Dimensional Metrology – Precision Measurement

Industrial Trades

Evaluations

Dimensional Metrology – Advanced Measurement

Language: DE, EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Dimensional Metrology – Advanced Measurement



Industrial Trades

Evaluations

Statistical Process Control

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Statistical Process Control

ISO Geometrical Product Specification | Size, Form and Location

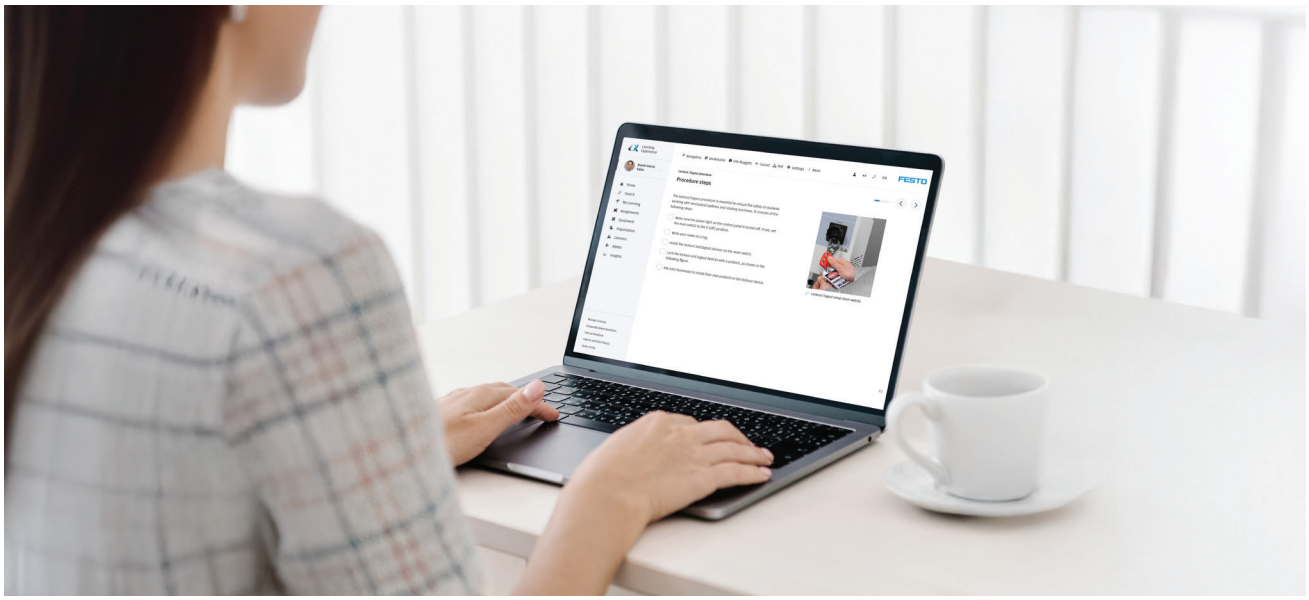
Language: DE, EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: ISO Geometrical Product Specification | Size, Form and Location

ISO Geometrical Product Specification | Surfaces New

Language: DE, EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: ISO Geometrical Product Specification | Surfaces



Industrial Trades

Evaluations

Single-Pump Systems

Language: EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Single-Pump Systems

Multiple-Pump Systems

Language: EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Multiple-Pump Systems

External Gear Pumps

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: External Gear Pumps

Pump Performance

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Pump Performance

Industrial Wiring

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Industrial Wiringw

Industrial Trades

Videos

Tape Measure - How Tool

Language: DE, EN, ES, PT
Learning Time: 15 minutes

The “How Tool” videos present different tools and how to use them correctly. This video is about the tape measure.

Knife Edge Square - How Tool

Language: DE, EN, ES
Learning Time: 15 minutes

The “How Tool” videos present different tools and how to use them correctly. This video is about the knife edge square.

Level - How Tool New

Language: DE, EN
Learning Time: 15 minutes

The video series “How Tool” describes different manufacturing processes as well as tools and their handling. This video is about the spirit level.

Vernier Caliper (Metric) - How Tool

Language: DE, EN, ES, PT
Learning Time: 15 minutes

The “How Tool” videos present different tools and how to use them correctly. This video is about the metric measurement with the vernier caliper.

Vernier Caliper (Inch Dimensions) - How Tool

Language: DE, EN, ES
Learning Time: 15 minutes

The “How Tool” videos present different tools and how to use them correctly. This video is about the inch measurement with the vernier caliper.

Industrial Trades

Videos



3 Point Internal Micrometer - How Tool New

Language: DE, EN
Learning Time: 15 minutes

The video series “How Tool” describes different manufacturing processes as well as tools and their handling. This video is about the 3 Point Internal Micrometer.

Hammer - How Tool

Language: DE, EN, ES
Learning Time: 15 minutes

The “How Tool” videos present different tools and how to use them correctly. This video is about hammers.

Industrial Trades

Videos



Screwdriver - How Tool

Language: DE, EN, ES
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about screwdrivers.

Hexagonal Key - How Tool

Language: DE, EN, ES
Learning Time: 15 minutes

The “How Tool” videos present different tools and how to use them correctly. This video is about the hexagonal or allen key.

Industrial Trades

Videos

Wrenches - How Tool

Language: DE, EN
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about wrenches.

Adjusting a Torque Wrench - How Tool

Language: DE, EN, ES
Learning Time: 15 minutes

The “How Tool” videos present different tools and how to use them correctly. This video is about adjusting the torque wrench.

Tightening with a Torque Wrench - How Tool

Language: DE, EN, ES
Learning Time: 15 minutes

The “How Tool” videos present different tools and how to use them correctly. This video is about tightening screws with the torque wrench.

Crimping Tool - How Tool

Language: DE, EN
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about a crimping plier.

Insulation-Stripping Plier - How Tool

Language: DE, EN, ES
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about an insulation-stripping plier.

Industrial Trades

Videos

Needle-nose Pliers - How Tool New

Language: DE, EN, FR
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about needle-nose pliers.

Pulling Line and Fish Tape - How Tool New

Language: DE, EN, FR
Learning Time: 15 minutes

The “How Tool” videos present different tools and how to use them correctly. This video is about the pulling line and the fish tape. These tools are often used in North American regions.

Threadlocker - How Tool New

Language: DE, EN
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about Threadlockers.

Conduit Reamer - How Tool New

Language: DE, EN, FR
Learning Time: 15 minutes

The video series “How Tool” describes different manufacturing processes as well as tools and their handling. This video is about the conduit reamer.

Files - How Tool

Language: DE, EN
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about metal files.

Industrial Trades

Videos

Filing as Manufacturing Process - How Tool

Language: DE, EN
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about filing.

Hacksaw - How Tool New

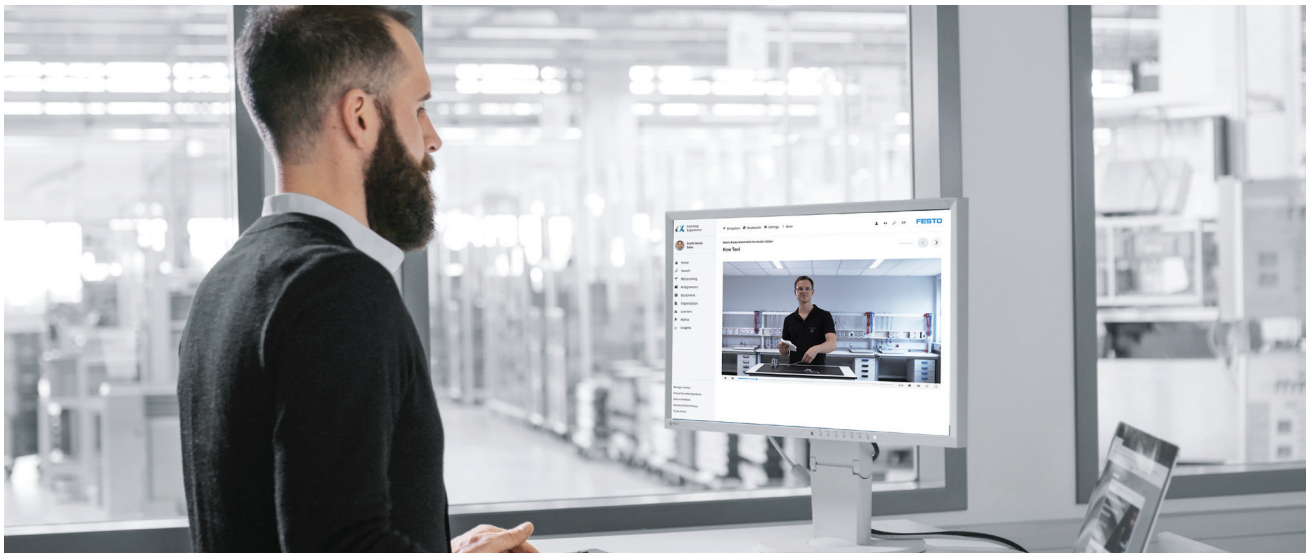
Language: DE, EN
Learning Time: 15 minutes

The video series “How Tool” describes different manufacturing processes as well as tools and their handling. This video is about the hand hacksaw.

Cutting and Bending Sheet Metal - How Tool New

Language: DE, EN
Learning Time: 15 minutes

In this course you will learn how to cut sheet metal with the sheet metal cutting machine, how to bend sheet metal with the sheet metal bending machine, and you will learn the most important formulas for calculating sheet metal lengths for forming.





Industrial Trades

Videos

Pressing in Ball Bearings - How Tool

Language: DE, EN
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about a knuckle joint press and how to press in ball bearings.

Pressing on Ball Bearings - How Tool

Language: DE, EN
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about pressing on bearings.

Cordless Drill - How Tool

Language: DE, EN
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about the cordless drill.

Cordless Drill and Cordless Impact Driver - How Tool

Language: DE, EN
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about the cordless drill and impact driver.



MetalWorking

Precision and Accuracy

Explore metalworking tools, machining processes, and digital technologies for optimal manufacturing. From material science to work safety, gain skills in CNC programming and advanced materials.


FESTO

MetalWorking

eLearning Courses

Metal Working: Material Science

Language: DE, EN, ES, FI
Learning Time: 1 hour

Whether in machine manufacturing, tool making or vehicle production, metalworking is an essential element in trades and industry.

Manufacturing Processes at a Glance New

Language: DE, EN
Learning Time: 2 hours

This course provides an overview of the various manufacturing processes that are mainly used in metalworking. The most common processes are explained using the categories of primary forming, forming, cutting, joining, coating and changing material properties.

Metal Working: Drilling

Language: DE, EN, ES, FI, FR
Learning Time: 1 hour

Drilling is a machining method for producing round holes. A chip-removing cutting motion is produced by the circular cutting motion and the straight-line feed motion of the tool.

Metal Working: Turning

Language: DE, EN, ES, FI, FR
Learning Time: 2 hours

Turning is a cutting production method for manufacturing rotationally symmetrical workpieces. The workpiece performs the main rotary cutting motion and the single-edged tool, the lathe tool, performs the advancing motion.

Metal Working: Milling

Language: DE, EN, ES, FI, FR
Learning Time: 2 hours

Milling is a machining method for processing metal, wood, and plastics. In the milling process, a milling tool produces flat surfaces and contours.





MetalWorking

eLab Courses

Basics of Technical Documentation New

Language: DE, EN, ES, FR, PT
Learning Time: 7 hours

Create standards-compliant technical drawings with different views, dimensions, bills of materials and production instructions by hand and in a CAD program.

Basics of Drilling and Forming (SkillsMagazine Kit) New

Language: DE, EN, ES, FR
Learning Time: 18 hours
Equipment: SkillsMagazine Kit

In this course, you will manufacture components for the “stacking magazine” module using various machines, tools and manufacturing processes. The special focus here is on drilling and forming. For this purpose, you use the semi-finished products from the “SkillsMagazine Kit”.

Basics of Milling (SkillsMagazine Kit) New

Language: DE, EN, ES, FR
Learning Time: 39 hours
Equipment: SkillsMagazine Kit

In this course, you will manufacture components for the “stacking magazine” module using various machines, tools and manufacturing processes. The special focus here is on the milling manufacturing process.

Basics of Turning (SkillsMagazine Kit) New

Language: DE, EN, ES, FR
Learning Time: 21 hours
Equipment: SkillsMagazine Kit

In this course, you will manufacture components for the “stacking magazine” module and other practice parts using various machines, tools and production methods. The special focus here is on the turning production method.

Commissioning of the Stacking Magazine (SkillsMagazine Kit) New

Language: DE, EN, ES, FR
Learning Time: 5 hours
Equipment: Simulation box, digital, SkillsMagazine Kit

This course takes you step by step through the mechanical and electrical assembly of the components and standard parts manufactured from the SkillsMagazine Kit to the fully assembled stacking magazine. You will then put this into operation.

MetalWorking

eTheory Courses

Introduction to Technical Documentation

Language: DE, EN, ES, FR
Learning Time: 4 hours

Learn about the basic principles of technical documentation, technical drawings and their structure.

Introduction to CAx Systems

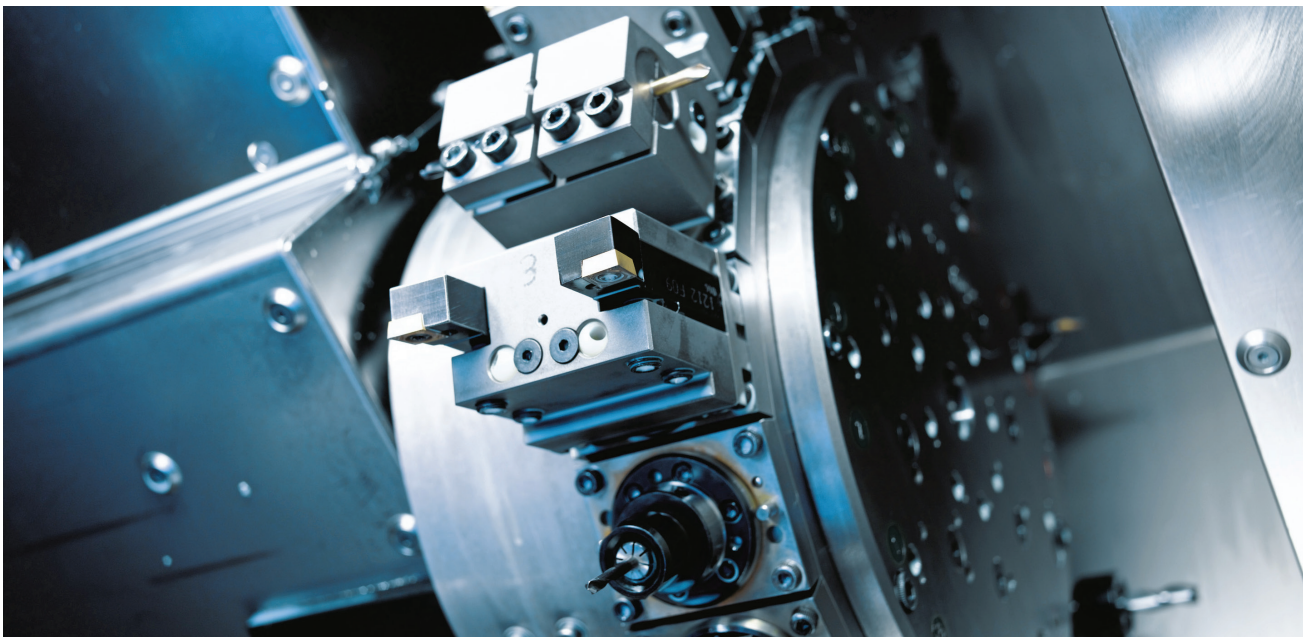
Language: DE, EN, ES, FR
Learning Time: 7 hours

Become familiar with the structure of CAx systems, the principles of CAD modeling, the CAD-CAM interfaces, computer-assisted work and production planning and computer-aided quality.

Introduction to CNC Technology

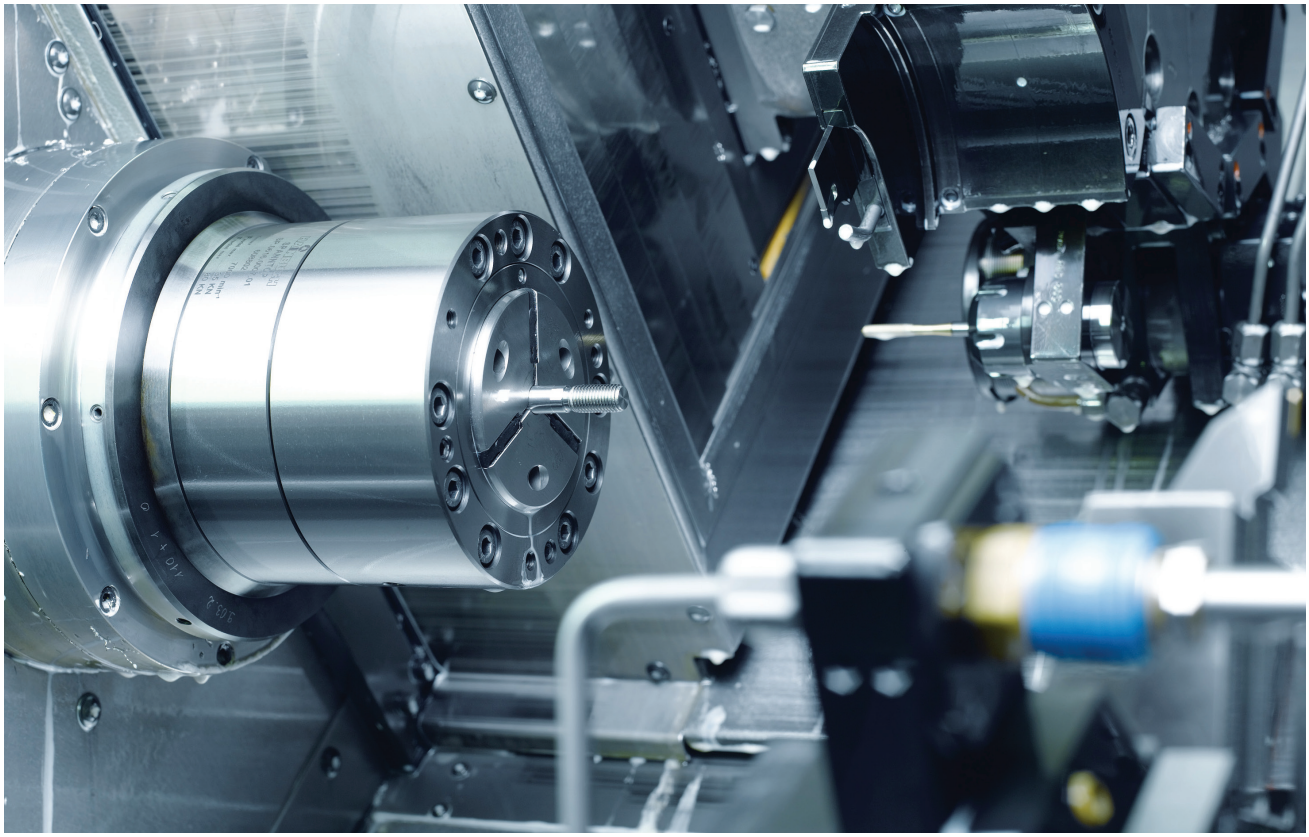
Language: DE, EN, ES, FR
Learning Time: 4 hours

Familiarize yourself with computerized numerical control (CNC) applications in industrial production.



MetalWorking

Evaluations



Basics of Technical Documentation

Language: DE, EN, ES, FR

Test your learned knowledge. Complete 20 interactive tasks on the basics of technical documentation.

Basics of Drilling and Forming New

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of Drilling and Forming

MetalWorking

Evaluations

Basics of Milling New

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of Milling

Basics of Turning New

Language: DE, EN, ES, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basics of Turning.

Basics of CAx Systems

Language: DE, EN, ES, FR

Check your acquired knowledge. Complete 20 interactive questions on the basics of CAx-systems.



MetalWorking

Evaluations

Basics of CNC Technology

Language: DE, EN, ES, FR

Test your learned knowledge. Complete 20 interactive tasks on the basics of CNC technology.



MetalWorking

Videos

Scribing - How Tool

Language: DE, EN, FR
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about scribing.

Center Punching - How Tool

Language: DE, EN, FR
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about center punching.

Drill - How Tool New

Language: DE, EN
Learning Time: 15 minutes

The “How Tool” video series describes different manufacturing processes as well as tools and their handling. This video is about the drilling machine.

Cutting internal Threads - How Tool New

Language: DE, EN, FR
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about cutting internal threads.

Cutting external Threads - How Tool New

Language: DE, EN
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about cutting external threads.

MetalWorking

Videos

Deburring a Drill Hole - How Tool New

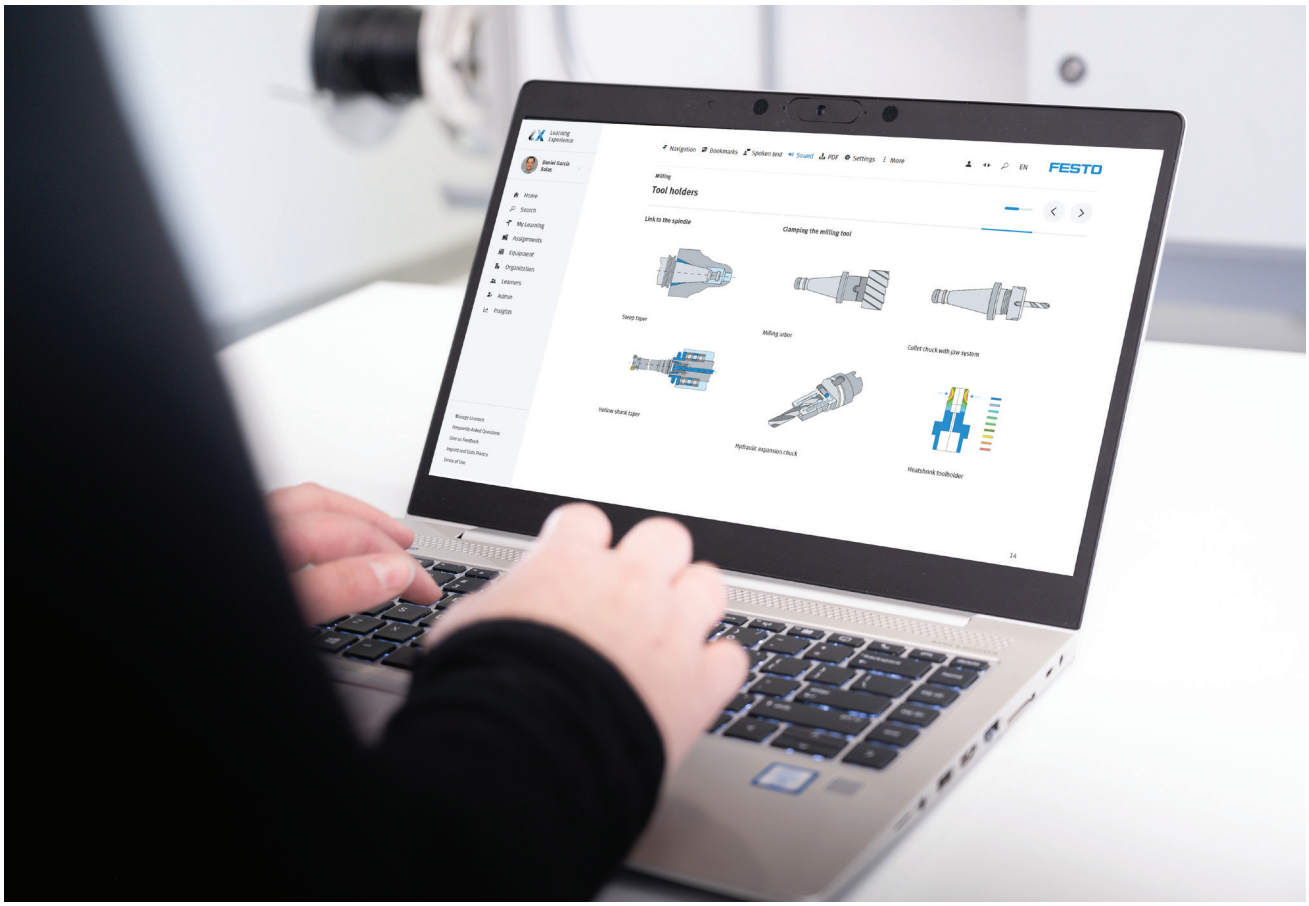
Language: DE, EN
Learning Time: 15 minutes

The video series “How Tool” describes different manufacturing processes as well as tools and their handling. This video is about deburring a drill hole professionally with a hand drill.

Pneumatic Hammer Drill - How Tool New

Language: DE, EN
Learning Time: 15 minutes

The “How Tool” videos present manufacturing processes as well as different tools and how to use them correctly. This video is about the pneumatic hammer drill.





Renewable Energy

Embrace a Sustainable Future

Explore the world of renewable energy. Learn about wind turbine power, solar thermal energy, and photovoltaics for a greener world.



Renewable Energy

eLearning Courses

Renewable Energies

Language: DE, EN, ES, FI, FR
Learning Time: 4 hours

This course provides an overview of the different sources of energy with a detailed focus on renewable energy sources and how they are used.

Sustainability – What Is It All About?

Language: EN, DE
Learning Time: 1 hour

This eLearning course introduces the topic of sustainability, provides an overview of the different dimensions and facets of sustainable development, and shows which measures can be used to promote sustainability in industry and in everyday life.

Circular Economy for a Sustainable Product Life Cycle New

Language: EN, DE
Learning Time: 1 hour

Learn how to maximize resource efficiency, reduce waste, and create innovative solutions that promote sustainability that benefit both your company, and the environment.



Renewable Energy

eLab Courses

Trainer Familiarization and Safety

Language: EN, ES, FR, RU

Learning Time: 6 hours

Equipment: Solar/Wind Energy Learning System

Familiarizes students with the components of the Solar/Wind Energy Training System and covers the basic safety principles required for its operation.

Energy Fundamentals

Language: EN, ES, FR, RU

Learning Time: 2 hours

Equipment: Solar/Wind Energy Learning System

Covers the basics of energy, including energy sources, power, work, measurements, and units. This is achieved through theory presentations related to the Solar/Wind Energy Training System.

Solar Module

Language: EN, ES, FR, RU

Learning Time: 8 hours

Equipment: Solar/Wind Energy Learning System

Covers the basic principles of using the solar module in the Solar/Wind Energy Training System, including how to site the module, how to use charge controllers and battery banks, and how to load the module.

Wind Turbine

Language: EN, ES, FR, RU

Learning Time: 8 hours

Equipment: Solar/Wind Energy Learning System

Covers the basic principles of using the wind turbine and generator in the Solar/Wind Energy Training System, including how to site the wind turbine, how the generator operates, how to use stop switches and battery banks, and how to load the wind turbine.

Solar/Wind Systems

Language: EN, ES, FR, RU

Learning Time: 12 hours

Equipment: Solar/Wind Energy Learning System

Covers the basic principles of systems that combine solar power and wind power using the Solar/Wind Energy Training System. Covered topics include the operation of diversion loads, controllers, inverters, and hybrid generators, the basic principles of power consumption, efficiency, transmission, and distribution, as well as troubleshooting.

Renewable Energy

eLab Courses

Going Green

Language: EN, ES, FR, RU
Learning Time: 1 hour
Equipment: Solar/Wind Energy Learning System
Explores the history of solar power and wind power. It then covers careers available in both these fields.



Renewable Energy

eLab Courses

Nacelle – Operation and Maintenance

Language: EN, ES
Learning Time: 19 hours
Equipment: Nacelle - Wind Turbine Learning System

Covers the production of electrical energy from wind power with a focus on operation, troubleshooting, and maintenance of the Nacelle Wind Turbine Learning System.

EDS Nacelle – Operation and Maintenance

Language: EN
Learning Time: 18 hours
Equipment: Nacelle - Wind Turbine Learning System

Covers the production of electrical energy from wind power with a focus on operation, troubleshooting, and maintenance of the EDS Nacelle.

Grid-Tied Nacelle

Language: EN
Learning Time: 2 hours
Equipment: Nacelle - Wind Turbine Learning System

Add-on to the course “Nacelle – Operation and Maintenance”. Focuses on the optional power generation module that allows sending electrical power back to the local power network.

Electrical Pitch Hub

Language: EN, FR
Learning Time: 16 hours
Equipment: Nacelle - Wind Turbine Learning System

Covers the fundamentals of electrical pitch control systems. Students will perform troubleshooting activities on an electrical pitch hub, which will enable them to develop important skills required to work in the wind power industry.

Hydraulic Pitch Hub

Language: EN, FR
Learning Time: 15 hours
Equipment: Nacelle - Wind Turbine Learning System

Covers the fundamentals of hydraulic pitch control systems. Students will perform troubleshooting activities on a hydraulic pitch hub, which will enable them to develop important skills required to work in the wind power industry.


lx.festo.com
FESTO
EN
Starting the trainer in automatic mode
CAUTION

Renewable Energy

eLab Courses

Introduction to Solar Thermal Energy

Language: EN
Learning Time: 3 hours
Equipment: Solar Thermal Learning System
Covers the basic principles of solar thermal energy.

Solar Thermal Energy Systems

Language: EN
Learning Time: 6 hours
Equipment: Solar Thermal Learning System
Covers the basic principles of solar thermal energy systems.

Evacuated Tube Solar Collectors

Language: EN
Learning Time: 2 hours
Equipment: Solar Thermal Learning System
Covers the basic principles of evacuated tube solar collectors, as an add-on to the EDS Solar Thermal.

Multi-Loop Systems

Language: EN
Learning Time: 6 hours
Equipment: Solar Thermal Learning System
Covers the basic principles of multi-loop systems using the EDS Solar Thermal.

Renewable Energy

Evaluations

Wind Power Systems New

Language: DE, EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Wind Power Systems

Nacelle – Operation and Maintenance

Language: EN, ES

This evaluation gives you the opportunity to measure your knowledge on the following topic: Nacelle – Operation and Maintenance

EDS Nacelle – Operation and Maintenance

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: EDS Nacelle – Operation and Maintenance

Grid-Tied Nacelle New

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Grid-Tied Nacelle

Electrical Pitch Hub New

Language: EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Electrical Pitch Hub

Renewable Energy

Evaluations

Hydraulic Pitch Hub New

Language: EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Hydraulic Pitch Hub



Renewable Energy

Videos

Megatrend Hydrogen – Explained in 5 Minutes New

Language: DE, EN
Learning Time: 15 minutes

This video looks at the future energy supply with green hydrogen and shows the opportunities and challenges it presents.

Circular Economy – Explained in 5 Minutes New

Language: DE, EN
Learning Time: 15 minutes

This video explains the importance of the circular economy. Our economic system uses a lot of raw materials that often end up as disposable products. Through sustainable product design and the use of Re-Strategies, we can reduce raw material consumption, extend the life of our products and protect our planet in the face of earth overload and resource scarcity.

Sustainability in Industry and its Dimensions – Explained in 5 Minutes New

Language: DE, EN
Learning Time: 15 minutes

This video introduces the diversity of sustainable action. It explains the various legal requirements that companies are confronted with due to the sustainability transition and the demands of a wide range of stakeholders. It also describes how companies can respond to the growing political pressure to implement sustainability measures quickly. In addition, it shows how companies can achieve sustainable success in order to counteract climate change and resource scarcity and remain competitive in a changing world.





Process Automation

Revolutionize Industries with Process Automation

Explore the power of utomation in transforming industries. Dive into instrumentation, control systems, and water management for a sustainable future.


FESTO


Control valve with a digital valve controller
(DVC6000), model 46950-E.

Process Automation

eLearning Courses

Process Automation

Language: DE, EN, ES, ET, FR, LT, PT, SV, ZH
Learning Time: 4 hours

This course deals with the basics of process automation including the handling of substances, system planning and engineering processes in practice.

Introduction to Water Cycle and Water Management

Language: EN, FR
Learning Time: 1 hours

Module 1 of the Water Management eLearning series. This course teaches you the basics of water, creates awareness for energy and resources and introduces you to the field of water management.

Water Purification

Language: EN, FR
Learning Time: 30 minutes

Module 2 of the Water Management eLearning series. This course will introduce you to the water purification process, including the topics of precipitation, flocculation and the need for water disinfection.

Water Supply

Language: EN, FR
Learning Time: 1 hour

Module 3 of the Water Management eLearning series. This course teaches you how drinking water is supplied from the source to the consumer, how operating pumps work and how water losses occur and how they can be avoided.

Wastewater Transport

Language: EN, FR
Learning Time: 1 hour

Module 4 of the Water Management eLearning series. In this course you will focus on wastewater transport, especially sewer systems. Learn about the components of a sewer system and important things to consider for the transport and regulation of wastewater.

Process Automation

eLearning Courses

Wastewater Treatment

Language: EN, FR
Learning Time: 1 hour

Module 5 of the Water Management eLearning series. This course will introduce you to wastewater treatment, including the topics of sedimentation, secondary or biological treatment as well as sludge treatment.

Sand Filtration for Water Purification

Language: EN, FR
Learning Time: 1 hour

Module 6 of the Water Management eLearning series. Learn what sand filtration is used for, what the different existing types of sand filtration are and how filters can be operated and maintained.

Membrane Filter Process in Water Management

Language: EN, FR
Learning Time: 1 hour

Module 7 of the Water Management eLearning series. Learn what membranes are, about the technology of membranes and the different membrane types, and how to operate membrane filtration processes.

Mechanical Pre-Treatment for Wastewater

Language: EN, FR
Learning Time: 1 hour

Module 8 of the Water Management eLearning series. In this course you will learn why wastewater needs to be pre-treated mechanically. We will focus on treatments using screens and grit chambers.

Adsorption in Water Management

Language: EN, FR
Learning Time: 30 minutes

Module 9 of the Water Management eLearning series. Learn more about adsorption in general and especially in water management with the help of a practical example.



Process Automation

eLab Courses

Measurement – Temperature

Language: EN
Learning Time: 4 hours
Equipment: Instrumentation and Process Control Learning System
Covers the fundamental principles of temperature measurement.

Measurement – Pressure, Flow, and Level

Language: EN, FR
Learning Time: 9 hours
Equipment: Instrumentation and Process Control Learning System
Covers the fundamental principles of pressure, flow, and level measurement.

Measurement – Air, Pressure, and Flow New

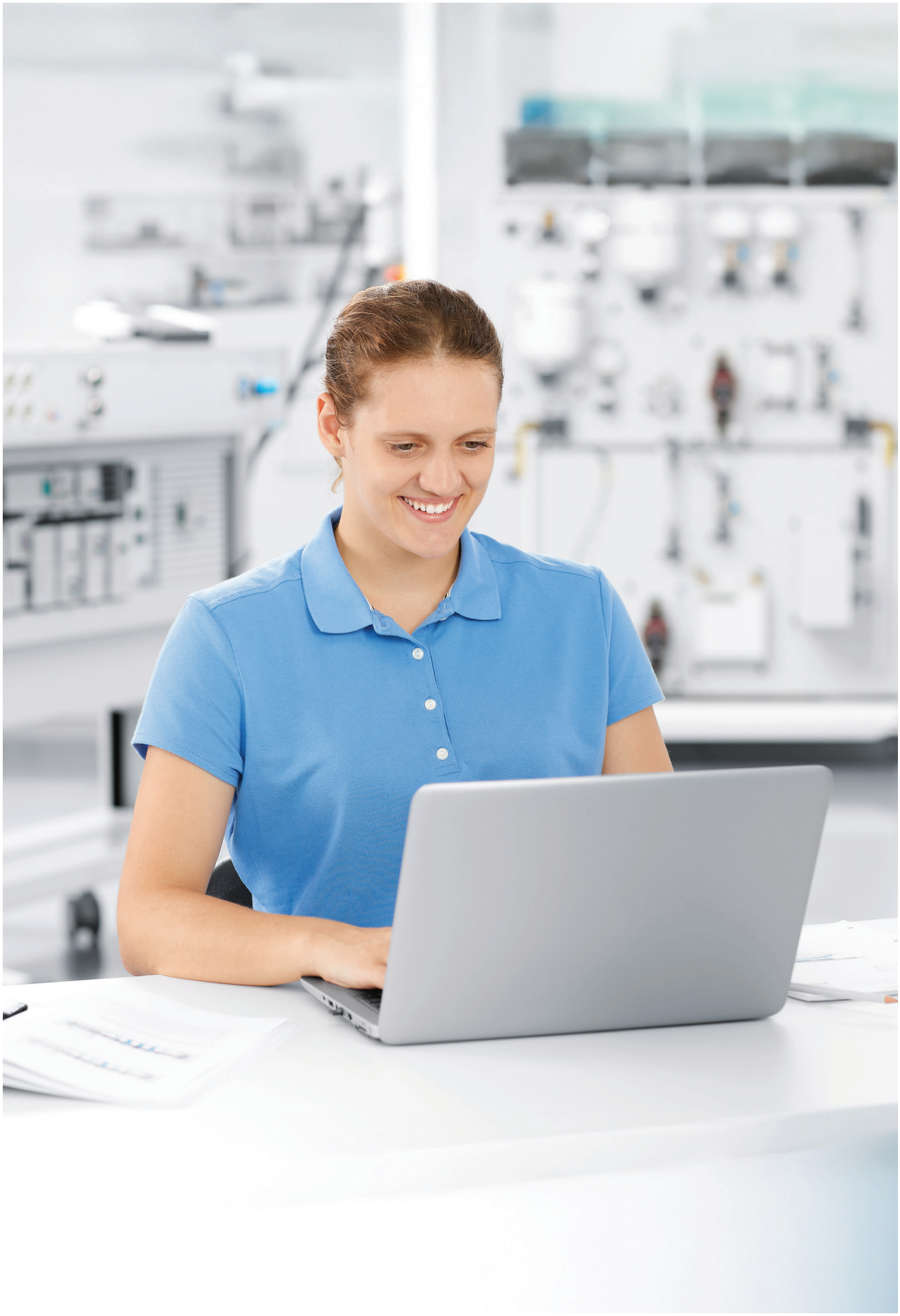
Language: EN
Learning Time: 6 hours
Equipment: Instrumentation and Process Control Learning System
Covers the fundamental principles of air, pressure, and flow measurement.

Measurement – pH and Conductivity New

Language: EN
Learning Time: 7 hours
Equipment: Instrumentation and Process Control Learning System
Covers the fundamental principles of pH and conductivity measurement.

Flow Primary Elements

Language: EN
Learning Time: 3 hours
Equipment: Instrumentation and Process Control Learning System
Covers the operation of two flow primary elements, orifice plates and pitot tubes, in the context of the Instrumentation and Process Control Training System.



Process Automation

eLab Courses

Pressure and Level Switches

Language: EN
Learning Time: 4 hours
Equipment: Instrumentation and Process Control Learning System
Covers the operation of pressure and level switches in the context of the Instrumentation and Process Control Training System.

Process Control – Temperature

Language: EN
Learning Time: 6 hours
Equipment: Instrumentation and Process Control Learning System
Covers the fundamental principles of process control, in the context of temperature control.

Process Control – Pressure, Flow, and Level

Language: EN, FR
Learning Time: 6 hours
Equipment: Instrumentation and Process Control Learning System
Covers the fundamental principles of process control, in the context of pressure, flow, and level control.



Process Automation

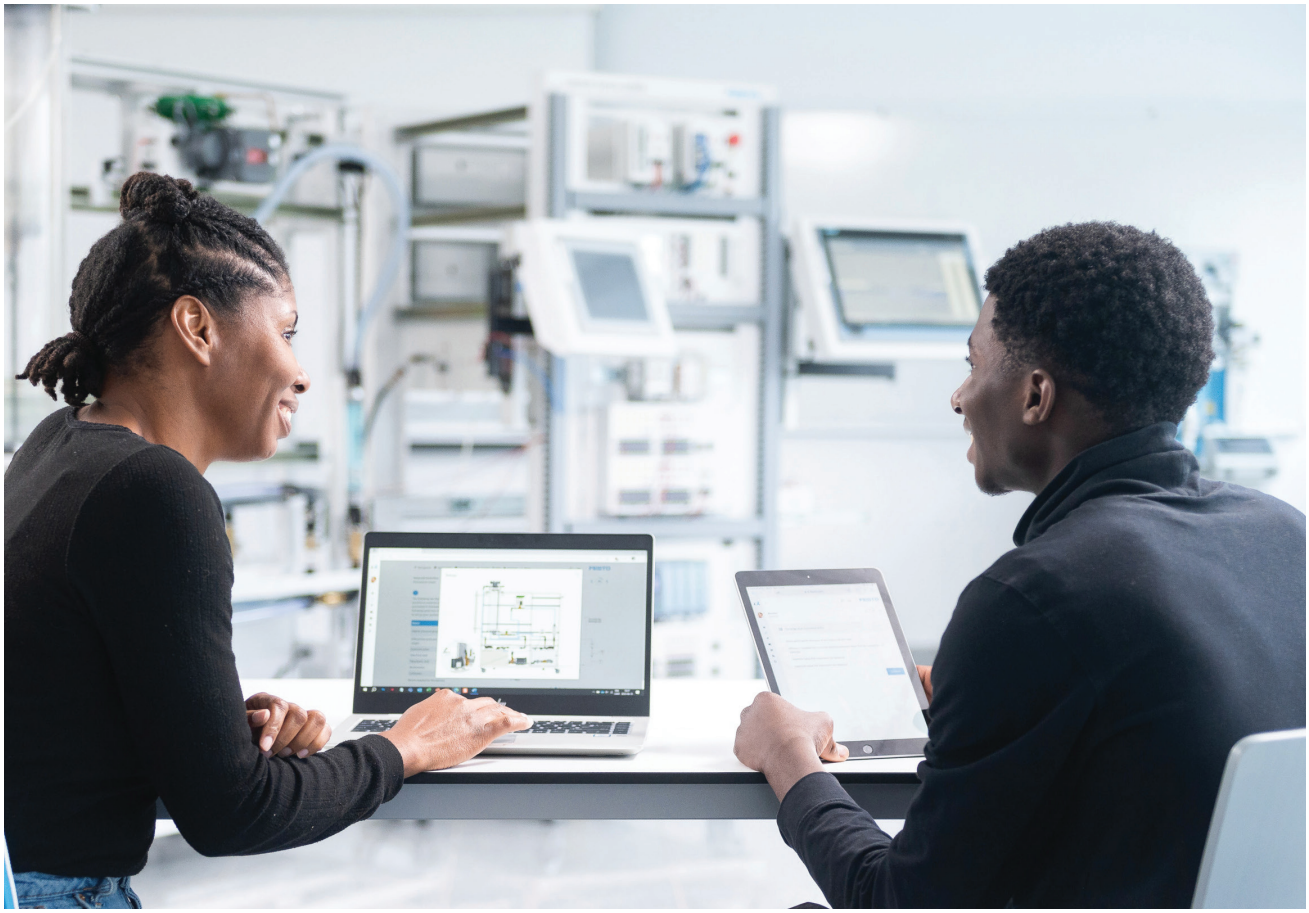
eLab Courses

Process Control – Air, Pressure, and Flow

Language: EN
Learning Time: 6 hours
Equipment: Instrumentation and Process Control Learning System
Covers the fundamental principles of process control, in the context of air, pressure, and flow control.

Process Control - pH and Conductivity

Language: EN
Learning Time: 5 hours
Equipment: Instrumentation and Process Control Learning System
Covers the fundamental principles of process control, in the context of pH and Conductivity control.



Process Automation

eLab Courses

Electromagnetic Flow Meters

Language: EN
Learning Time: 3 hours
Equipment: Instrumentation and Process Control Learning System

Covers the operation of electromagnetic flow meters in the context of the Instrumentation and Process Control Training System.

Ultrasonic Flow Transmitter

Language: EN, FR
Learning Time: 2 hours
Equipment: Instrumentation and Process Control Learning System

Covers the operation of ultrasonic flow transmitters in the context of the Instrumentation and Process Control Training System.

Ultrasonic Level Transmitter

Language: EN
Learning Time: 3 hours
Equipment: Instrumentation and Process Control Learning System

Covers the operation of ultrasonic level transmitters in the context of the Instrumentation and Process Control Training System.

Paddle Wheel Flow Transmitter

Language: EN
Learning Time: 2 hours
Equipment: Instrumentation and Process Control Learning System

Covers the operation of paddle wheel flow transmitters in the context of the Instrumentation and Process Control Training System.

Coriolis Flow Transmitter

Language: EN, ES, FR
Learning Time: 2 hours
Equipment: Instrumentation and Process Control Learning System

Covers the operation of Coriolis flow transmitters in the context of the Instrumentation and Process Control Training System.



Process Automation

eLab Courses

Vortex Flow Transmitter

Language: EN
Learning Time: 2 hours
Equipment: Instrumentation and Process Control Learning System
Covers the operation of vortex flow transmitters in the context of the Instrumentation and Process Control Training System.

Capacitive Level Transmitters

Language: EN
Learning Time: 2 hours
Equipment: Instrumentation and Process Control Learning System
Covers the operation of capacitive level transmitters in the context of the Instrumentation and Process Control Training System.

Radar Level Transmitters (Endress+Hauser FMR240 and FMP40)

Language: EN
Learning Time: 3 hours
Equipment: Instrumentation and Process Control Learning System
Covers the operation of radar level transmitters in the context of the Instrumentation and Process Control Training System, using Endress+Hauser FMR240 and FMP40 transmitters.

Radar Level Transmitters (Endress+Hauser FMR51 and FMP50)

Language: EN, ES
Learning Time: 4 hours
Equipment: Instrumentation and Process Control Learning System
Covers the operation of radar level transmitters in the context of the Instrumentation and Process Control Training System, using Endress+Hauser FMR51 and FMP50 transmitters.

Three-Phase Separator – Basic Control

Language: EN
Learning Time: 16 hours
Equipment: Three-Phase Separator
Covers the basic principles of three-phase separation in the oil industry. This is achieved through theory presentations and hands-on manipulations using the Three-Phase Separator Learning System.


HV101
Three-Phase Separator
FESTO
TIT101

Process Automation

eLab Courses

Temperature Process and Heat Exchanger

Language: EN
Learning Time: 16 hours
Equipment: Instrumentation and Process Control Learning System
Covers the fundamental principles of temperature process control and heat exchangers.

Heat Exchangers and Advanced Temperature Measurement

Language: EN
Learning Time: 6 hours
Equipment: Process Control Learning System
Covers the operating principles of heat exchangers and the advanced principles of temperature measurement.



Process Automation

eLab Courses



Boiler Control

Language: EN
Learning Time: 3 hours
Equipment: Instrumentation and Process Control Learning System
Covers the operation of boilers in the context of the Instrumentation and Process Control Training System.

Pressure, Flow, and Level Processes New

Language: EN, FR
Learning Time: 27 hours
Equipment: Process Control Learning System
Covers the fundamental principles of pressure, flow, and level processes.

Process Automation

eLab Courses

pH Process Control New

Language: EN
Learning Time: 10 hours
Equipment: Process Control Learning System
Covers the fundamental principles of pH process control.

Three-Phase Separator – Instrumentation

Language: EN
Learning Time: 13 hours
Equipment: Three-Phase Separator
Covers several instruments commonly used on three-phase separators in the oil industry. They include five types of flow meters (rotameters, turbine, differential pressure, electromagnetic, and Coriolis flowmeters), level switches, radar level meters, pressure meters and temperature meters.



Process Automation

eLab Courses



HART Device Configuration New

Language: EN
Learning Time: 4 hours
Equipment: Instrumentation and Process Control Learning System
Covers the configuration of HART devices in the context of process automation.

Advanced Process Control

Language: EN
Learning Time: 5 hours
Equipment: Instrumentation and Process Control Learning System
Covers advanced principles of process control.

Process Automation

eLab Courses

Water Supply New

Language: EN
Learning Time: 5 hours
Equipment: EDS Water Management
Teaches the fundamentals of water supply.

Water Purification New

Language: EN
Learning Time: 2 hours
Equipment: EDS Water Management
Teaches the fundamentals of water purification.

Wastewater Transport New

Language: EN
Learning Time: 2 hours
Equipment: EDS Water Management
Teaches the fundamentals of wastewater transport.

Wastewater Treatment New

Language: EN
Learning Time: 4 hours
Equipment: EDS Water Management
Teaches the fundamentals of wastewater treatment.

Rapid Sand Filtration New

Language: EN
Learning Time: 2 hours
Equipment: EDS Water Management
Teaches the principles and operation of sand filtration in water treatment.

Process Automation

eLab Courses



Membrane Filtration Processes

Language: EN
Learning Time: 2 hours
Equipment: EDS Water Management

Membrane filtration is widely used in modern water treatment. Its application depends on pore size. In drinking water and wastewater treatment, microfiltration and ultrafiltration are used to retain pathogenic germs. The operating modes of cross-flow and dead-end filtration are also important considerations.

Monitoring, Controlling, and Optimizing Operations New

Language: EN
Learning Time: 23 hours
Equipment: EDS Water Management

Teaches how to monitor, control, and optimize operations in the context of water management.

Energy Optimization in Water and Wastewater Treatment Plants New

Language: EN
Learning Time: 6 hours
Equipment: EDS Water Management

Teaches how to optimize energy usage in water and wastewater treatment plants.

Process Automation

eLab Courses

EduKit PA Energy

Language: EN
Learning Time: 2 hours
Equipment: EdukitProcessAutomation
Introduces the challenges of energy generation and efficiency, guides learners through the setup and analysis of a filling system, and develops practical skills in energy monitoring, optimisation, and sustainable process design.

MPS PA 204 Process Automation

Language: EN
Learning Time: 23 hours
Equipment: ModularProductionSystemsMPS
Covers the fundamentals of process automation using the MPS PA 204.



Process Automation

Evaluation

Measurement – Temperature

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Measurement – Temperature

Process Control – Temperature

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Process Control – Temperature

Measurement – Pressure, Flow, and Level

Language: EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Measurement – Pressure, Flow, and Level

Pressure, Flow, and Level Processes

Language: EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Pressure, Flow, and Level Processes

Process Control – Pressure, Flow, and Level New

Language: EN, FR

This evaluation gives you the opportunity to measure your knowledge on the following topic: Process Control – Pressure, Flow, and Level

Process Automation

Evaluation

Measurement – pH and Conductivity New

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Measurement – pH and Conductivity

Three-Phase Separator – Basic Control

Language: EN, ZH

This evaluation gives you the opportunity to measure your knowledge on the following topic: Basic Control for the Three-Phase Separator

Three-Phase Separator – Instrumentation

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Instrumentation for the Three-Phase Separator

Advanced Process Control

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Advanced Process Control

Process Automation

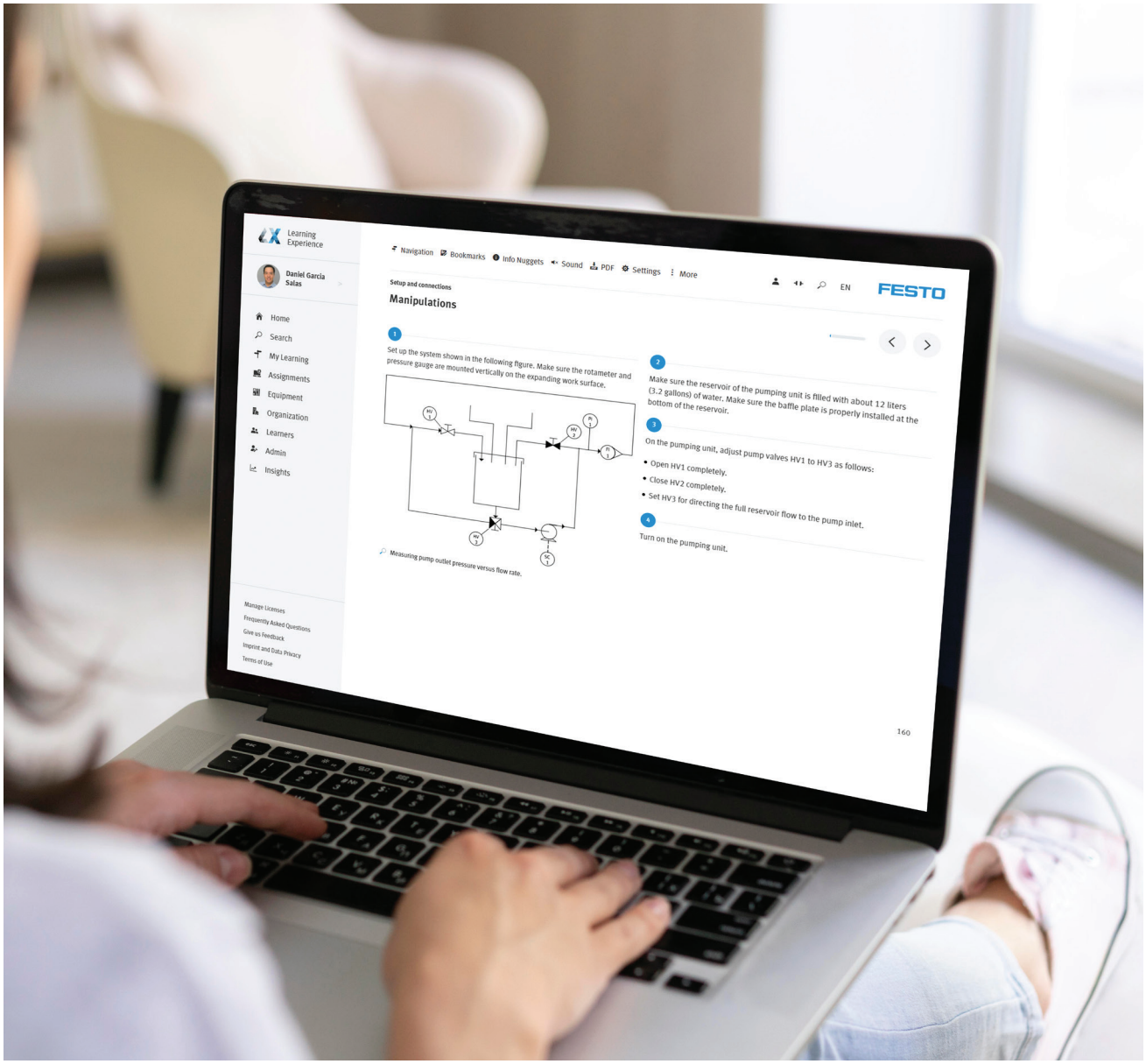
Videos

Biologization - Explained in 5 Minutes

Language: EN, DE

Learning Time: 15 minutes

This video describes the topic of biologization and the necessary steps to drive the biological transformation of the industry.

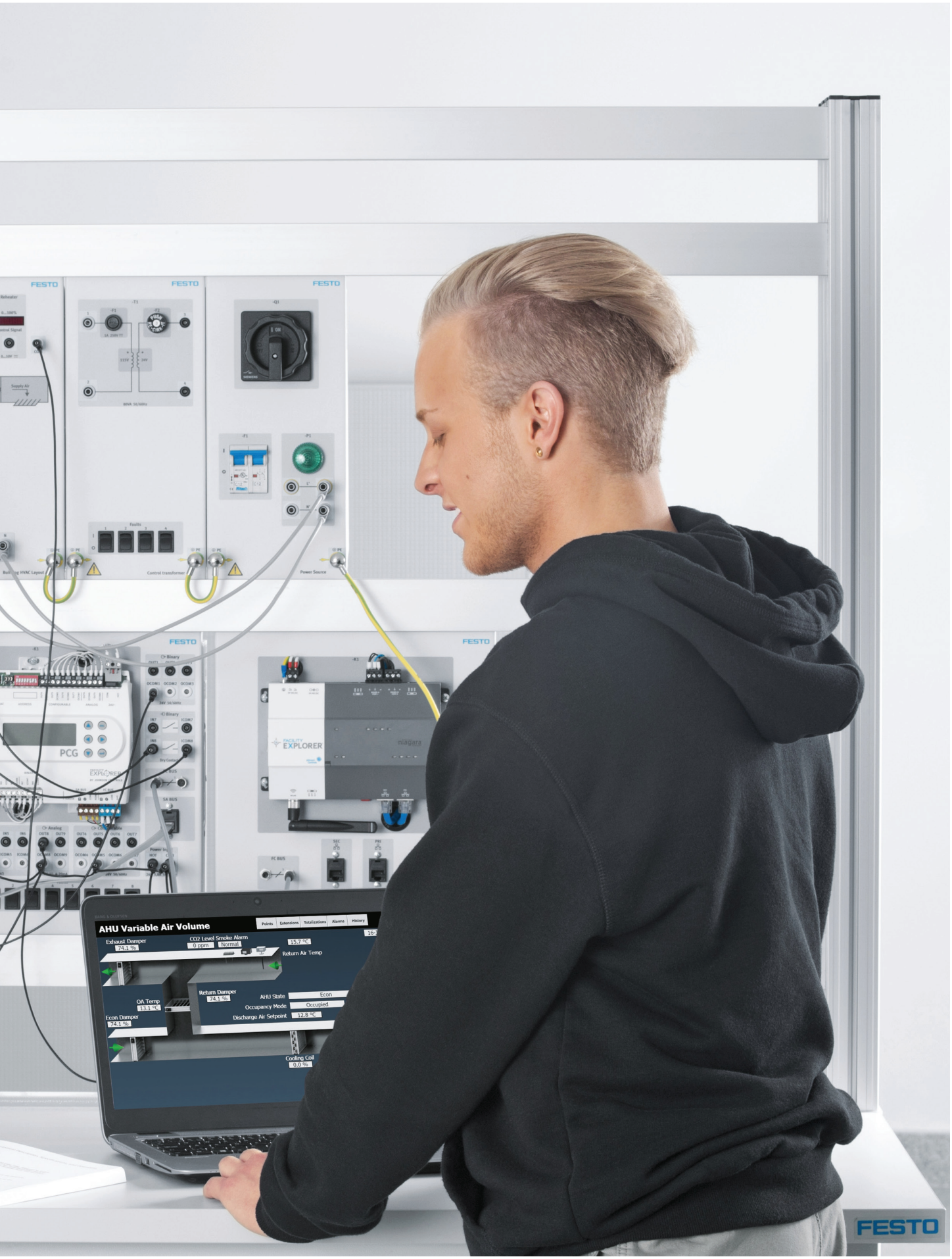




Building System Technology

Automate Living and Working Spaces

Transform spaces with Building System Technology. Explore the essentials of energy efficiency, HVAC, lighting, control systems and the latest in safety technology.


FESTO
AHU Variable Air Volume
Points
Extensions
Totalizations
Alarms
History
Exhaust Damper
74.1 %
CO2 Level
0 ppm
Smoke Alarm
Normal
15.7 °C
Return Air Temp
Return Damper
74.1 %
OA Temp
13.1 °C
Econ Damper
74.1 %
AHU State
Econ
Occupancy Mode
Occupied
Discharge Air Setpoint
12.8 °C
Cooling Coil
0.0 %
PCG
FACILITY EXPLORER
niagara
FESTO

Building System Technology

eLearning Courses

Safety Technology

Language: DE, EN, ES, ET, FR, LT, SV, ZH
Learning Time: 4 hours

This course focuses on the design aspects of safety engineering and helps to understand safety engineering equipment and hazard analysis methods.

Machine Safety Awareness New

Language: DE, EN
Learning Time: 1 hour

Module 1 in the series of learning program of Machine Safety. Ensure safety and compliance by obtaining critical information on protecting workplaces, creating safe working environments and understanding the legal aspects of Machine Safety.

Risk Assessment According to ISO 12100 New

Language: DE, EN
Learning Time: 1 hour

Module 2 in the series of learning programs for Machine Safety. Explore the key principles and practical techniques for identifying, evaluating, and reducing risks in your workplace, ensuring safety and compliance with international standards.

General Safety Functions New

Language: DE, EN
Learning Time: 1 hour

Module 3 in the series of learning program of Machine Safety. General safety functions emphasize the safe operation of machinery and equipment. The integration of these principles is intended to proactively reduce the risks of accidents, injuries and damage that may arise in the course of machinery operation.

Evaluation of Technical Protective Measurements New

Language: DE, EN
Learning Time: 1 hour

Module 4 in the series of learning programs for Machine Safety. Reducing risks, preventing internal failures in automation systems, and ensuring the safety of life, health, and the environment. Acquiring this knowledge enhances your contribution to a safer and compliant workplace.

Building System Technology

eLearning Courses

Safety Sub-Functions in Pneumatic and Electric Automation New

Language: DE, EN
Learning Time: 1 hour

Module 5 in the series of learning program of Machine Safety. Understanding safety sub-functions is crucial for ensuring a secure work environment, especially in hazardous situations within pneumatic and electric automation. Understanding them can all help maintain a safe and compliant workplace.




FESTO
DALI MASTER
-K1
BY9WT
LIGHTING SOLUTIONS
Festo Info Portal
DA+
DA-
-T1
PRI
L
N
PE
DALI ROOM SCENE
-E1
-E4.1
-E2
-E4.2
-E3
-E4
DALI

Building System Technology

eLab Courses

Building HVAC – Direct Digital Control (BACnet)

Language: DE, EN, FR, RU
Learning Time: 9 hours
Equipment: Building HVAC Learning System
Covers the basic principles of heating, ventilation, and air conditioning (HVAC) using direct digital control (BACnet).

Building HVAC – Direct Digital Control (CGM Controllers) New

Language: EN
Learning Time: 10 hours
Equipment: Building HVAC Learning System
Covers the basic principles of heating, ventilation, and air conditioning (HVAC) using direct digital control with CGM controllers (BACnet).

Refrigeration Capstone Project

Language: EN
Learning Time: 22 hours
Equipment: Refrigeration Capstone Project
This course proposes a project in the field of refrigeration designed to help students consolidate their skills. To complete the project, students have to assemble, install, and commission a challenging refrigeration circuit.

DALI New

Language: DE, EN
Learning Time: 4 hours
Equipment: The DALI Master controls
In this course you will learn the basics of lighting control via DALI, set up such a system and program it.

Smart Home New

Language: DE, EN
Learning Time: 5 hours
Equipment: Smart Home, TP 1135
In this course, you will learn the basics of smart home technology and apply what you've learned while setting up a system.

Building System Technology

Evaluation | Videos

Machine Safety | Evaluation New

Language: DE, EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Machine Safety

Building HVAC – Direct Digital Control | Evaluation New

Language: EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Building HVAC – Direct Digital Control

Energy Efficiency – Explained in 5 Minutes | Video

Language: DE, EN
Learning Time: 15 minutes

This video presents approaches on how industrial companies can use energy more efficiently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Reset
2-Hand



Organization and People

Optimizing Performance and Success

Join the leaders in efficiency and innovation. Learn the essentials of Lean Management, Project Management, and emerging trends in productivity and performance.


Design Thinking
Workshop Industrial
Workforce Development
Agenda
Welcome
Customer

Organization and People

eLearning Courses

5S Workplace Organization

Language: DE, EN, ES, FR, PT
Learning Time: 3 hours

The objective of the 5S is to become familiar with methods for creating ideal, exemplary, well-organized workstations (both in industrial and administrative areas).

Poka Yoke

Language: DE, EN, ES, FR
Learning Time: 3 hours

Poka Yoke describes a principle that includes technical measures/equipment for preventing errors and eliminating them immediately.

TPM – Total Productive Maintenance

Language: DE, EN, ES, FR
Learning Time: 2 hours

It is always better to act than to react. Bearing this in mind, many businesses strive to stabilize plant performance, and to introduce preventive maintenance.

Value Stream Analysis and Mapping

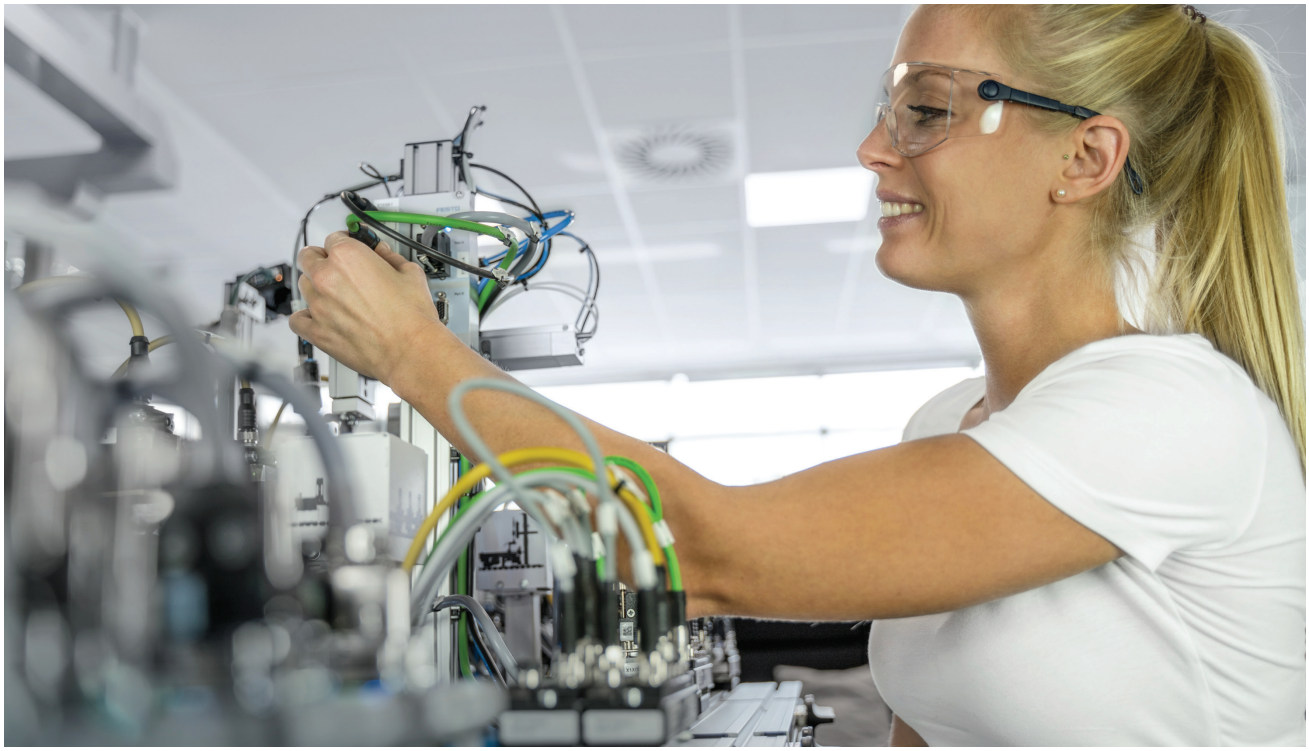
Language: DE, EN, ES, FR
Learning Time: 4 hours

Those who deal with value stream analysis and value stream mapping have one goal: to create production and production processes that achieve a true value stream.



Organization and People

eLab Courses



MPS 404 Economics: Data Collection and KPIs with Confirmation Slip New

Language: DE, EN

Learning Time: 6 hours

Equipment: MPS System 404-1

The “Data collection and KPIs with confirmation slip” course explains how to collect process data, KPIs for production and how to handle confirmation slips.In practice, the data collected is used to calculate KPIs for production and for cost accounting of production orders, making it an important part in helping ensure the efficient operation of a production facility.

MPS 404 Economics: KPIs for Small Batch Production New

Language: DE, EN

Learning Time: 6 hours

Equipment: MPS System 404-1

In the course “Cylinder production in a small batch production” you will learn how production processes are mapped in a simulation program and how various influencing factors affect the production KPI both in a positive and negative sense.

Organization and People

eLab Courses

MPS 404 Economics: Production Order Costs New

Language: DE, EN

Learning Time: 6 hours

Equipment: MPS System 404-1

In the course “Production order costs” you will learn which costs are included in the production costs and how they are calculated. You will also gain deeper insight into the relationships between production processes and cost accounting and controlling.

MPS 404 Economics: Simulation of a Semi-Automatic Assembly Station New

Language: DE, EN

Learning Time: 3 hours

Equipment: MPS System 404-1

In the “Simulation of a semi-automatic assembly station” course, you will learn how to model the assembly station and calculate the KPIs.It will also be possible to display errors and their effects without interrupting real production. In later steps, you will learn how to simulate improvement measures and determine their effects on the KPIs.

MPS 400 Economics: Series Assembly with the MPS System New

Language: DE, EN

Learning Time: 4 hours

Equipment: MPS System 404-1

In the “Series assembly with the MPS system” course, you will learn how the KPIs are determined in an automated series assembly. You will learn how this data is calculated, how the data required is recorded and which events can influence this KPI.



Organization and People

eTheory Courses

Introduction to Lean Production

Language: DE, EN
Learning Time: 1 hour

In this basic course, you will familiarize yourself with Lean Production and its most important elements.

Basics of Production Control

Language: DE, EN
Learning Time: 1 hour

In this course, you will explore the relationship between Lean Production, Just in Time philosophy, and production systems control.

Designing Material Flows in Companies

Language: DE, EN
Learning Time: 2 hours

In this course, you will learn how to design robust and continuous flows and what principles to consider. You will also learn which planning and analysis methods are used for this purpose and how line balancing can be achieved very practical way for an even load between several workstations.

Selected Methods of Production Control

Language: DE, EN
Learning Time: 2 hours

This course builds on the fundamentals of manufacturing control and gives you an overview of common control methods.

Successfully Applying Problem-Solving Techniques New

Language: DE, EN
Learning Time: 4 hours

In this course you will deal with the problem-solving process and learn various problem-solving techniques.

Organization and People

Evaluation

Lean Production New

Language: DE, EN

This evaluation gives you the opportunity to measure your knowledge on the following topic: Lean Production



Organization and People

Videos

Excellent Project Management - Explained in 5 Minutes

Language: DE, EN
Learning Time: 15 minutes

Every innovation, every idea is implemented via a project. This video is about the factors of excellent project management and the process of project success stories.

The Perfect Project Owner - Explained in 5 Minutes

Language: DE, EN
Learning Time: 15 minutes

This video shows the role of the perfect owner as a key factor in successful project management.

Project Status Report - Explained in 5 Minutes

Language: DE, EN
Learning Time: 15 minutes

Status reports are often used for project controlling. This video shows a best practice example and provides helpful information for a successful project management.

Design Thinking - Explained in 5 Minutes

Language: DE, EN
Learning Time: 15 minutes

This video explains in 5 minutes the philosophy and process that make Design Thinking such a successful method.

Virtual Reality - Explained in 5 Minutes

Language: DE, EN
Learning Time: 15 minutes

This video describes the world of virtual reality. It shows some examples of applications as well as the benefit of virtual realities in the industry.



STEM

Innovation through Collaboration

Shape tomorrow with the synergy of Science, Technology, Engineering, and Mathematics. STEM encompasses these core disciplines, fostering innovation and problem-solving skills essential for the dynamic future.



STEM

eLearning Courses

Biologization New

Language: DE, EN
Learning Time: 2 hours

In this eLearning course, we delve into the topic of biologization – a method that has the potential to change our world for good. You will discover how innovative products are developed through the combination of technology and biology, how algae play an important role in the fight against climate change and how research works.



STEM

eLab Courses

Basics of CAD with Onshape New

Language: DE, EN
Learning Time: 3 hours

Exploring additive manufacturing with a 3D printer challenges students to print parts while adhering to process constraints to design 3D models for 3D printing and prepare the data for printing.

Introduction to CAD

Language: EN, ES
Learning Time: 10 hours
Equipment: STEM Computer-Aided Design

As Computer-Aided Design (CAD) designers tasked with creating innovative product designs, students are challenged to develop ideas within certain specifications and constraints, and apply CAD software tools to translate their ideas into new product designs.

3D Printing - Introduction New

Language: DE, EN
Learning Time: 9 hours

In this course, you will learn everything you need to know about 3D printing.First, you will learn about 3D printing in general as a production method and then delve deeper into the various possibilities offered by 3D printing.Once you have mastered the fundamental theory, you will go straight into the first practical phase, in which you will complete your first 3D printing project with the Craftbot!You will then be equipped to come up with further project ideas yourself and implement them with the 3D printer.

Introduction to CNC Lathe

Language: EN
Learning Time: 9 hours
Equipment: STEM CNC Lathe

Exploration into subtractive manufacturing using a CNC lathe challenges students to develop prototypes and produce parts, adhering to certain specifications and constraints to design and export 3D models for the prototype production process.

STEM

eLab Courses

Introduction to CNC Mill

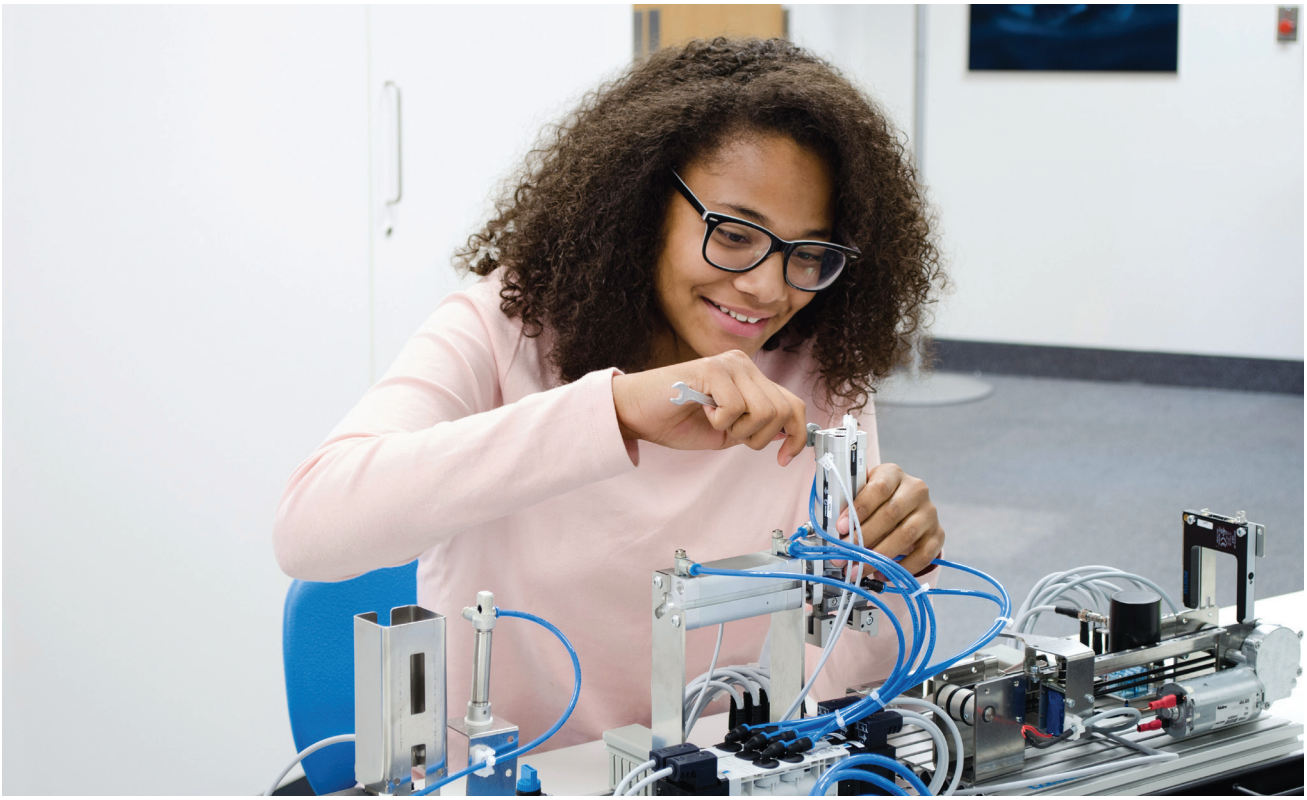
Language: EN
Learning Time: 10 hours
Equipment: STEM CNC Mill

Exploration into subtractive manufacturing using a CNC mill challenges students to develop prototypes and produce parts, adhering to certain specifications and constraints to design and export 3D models for the prototype production process.

Introduction to Plastics

Language: EN, ES
Learning Time: 11 hours

As plastic component/product designers tasked with selecting the best material for specific applications, students are challenged to design a prototype that consists of two materials processed in two different ways to demonstrate the characteristics of each.



STEM

eLab Courses

Introduction to Exploring Mechanisms

Language: EN, ES
Learning Time: 17 hours

Mechanisms play a key role in the construction or operation of machines and structures, but also contribute to areas such as transportation, production, packaging, and the stability of structures in general. A crane, for example, combines many mechanisms in order to perform the task of lifting and placing objects in position.

Introduction to Exploring Mechatronics

Language: EN, ES, KO, PT
Learning Time: 15 hours

Students, taking on the role of mechatronics engineers, are challenged to design an automated system that adheres to given specifications and constraints, and explore the interaction between mechanics, electrical engineering, electronics, and computer engineering.

Introduction to Automation and Robotics

Language: EN, ES
Learning Time: 14 hours
Equipment: STEM Automation and Robotics

Students explore robotics systems and the role they play in industry, actively designing a complete robotics system with a robot arm and peripheral tools to simulate manufacturing processes.

Introduction to Engineering and Stress Analysis

Language: EN, ES
Learning Time: 18 hours

Students act as civil engineers, challenged with the design andconstruction of a new bridge prototype, exploring in the process the basics of statics and stress analysis. Students also explore the considerations engineers make before designing structures.

STEM

eLab Courses

Introduction to Exploring Electricity

Language: EN, ES
Learning Time: 16 hours

In this course, you will be challenged to design electric circuits that are required to solve typical electrical problems found in both residential homes and commercial industry. As you explore and practice the skills needed to work with electricity, you will gain some basic knowledge that would be required to work as an electrician or electrical contractor, or to become an electrical engineer.

Introduction to Exploratory Electronics

Language: EN, ES
Learning Time: 15 hours

As electronics technicians tasked with building a piece of test equipment, students are challenged to build and test a prototype circuit of a non-contact, digital tachometer.

Introduction to Fiber Optics and Lasers

Language: EN
Learning Time: 17 hours
Equipment: STEM Fiber Optics and Lasers

Students are challenged to design, build, and demonstrate a two-segment (optical fiber and over-the-air laser links), end-to-end circuit, including the specification of the equipment required at the interface between the two segments and at both terminals.

Introduction to Process Engineering

Language: EN, ES
Learning Time: 14 hours
Equipment: STEM Introduction to Process Engineering

As a facilities manager assigned to work at a factory that consists of machines and processes that generate tremendous amounts of heat, students are challenged to evaluate and select an automatic control system to maintain the cooling system tank at an optimal level.

STEM

eLab Courses

Introduction to Alternative Energy

Language: EN, ES

Learning Time: 22 hours

Equipment: STEM Alternative Energy

Innovation in practical technology applications is an essential part of our industrial and commercial world. Innovation is particularly important when considering energy sources. We still depend primarily on nonrenewable energy sources to provide the fuel and electric power that are essential for own existence. As its very nature suggests, nonrenewable energy sources will eventually run out. While “how long” may be an open question, it is never too late to continuously evaluate alternate sources, and to focus on renewable options. Raising awareness and increasingly using these alternative energy sources will impact our global world in ways both big and small.

Introduction to Environment Technology/Water

Language: EN, ES

Learning Time: 21 hours

Equipment: STEM Environmental Technology/Water

As water scarcity and pollution pose a threat to vaster regions of the world, the current use of the water supply is unsustainable and has caused both environmental and societal stressors. Pollution, directly to the water sources and indirectly through air and soil, has negatively impacted natural and manmade ecosystems largely due to a lack of understanding, awareness, or legislation. Engineers, environmental protection professionals, and scientists face new challenges in ensuring a fresh, clean source of water for both humans and wildlife.



STEM

eLab Courses



Bionics Kit

Language: DE, EN, NL, PL
Learning Time: 1 hour
Equipment: Bionic Kit
Biological and technical basics to bionic principles, fish, elephant, chameleon and the Bionics Kit.

Bionic Flower

Language: DE, EN
Learning Time: 4 hours
Equipment: Bionic Flower
Biological and technical basics of folding mechanism, light, sensor actor systems and the Bionic Flower.

Introduction to Aerodynamics

Language: EN, ES
Learning Time: 30 hours
Equipment: STEM Aerodynamics eSeries
As aeronautical design engineers, students design and build an airfoil prototype for the wings of an airplane, performing various activities to verify aerodynamics principles presented along the course using a wind tunnel.

STEM

Videos

STEAM Education Approach – Explained in 5 Minutes

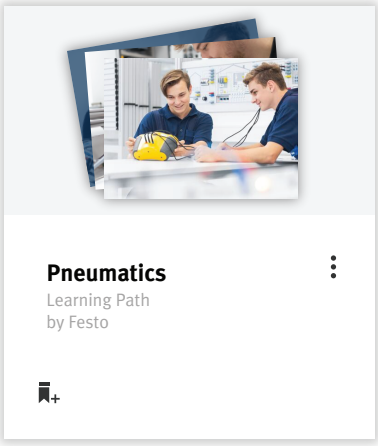
Language: DE, EN
Learning Time: 15 minutes

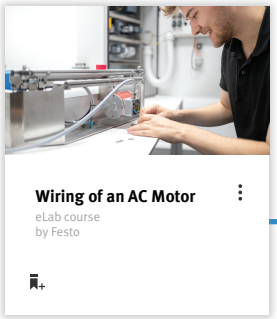
Science, Technology, Engineering, Arts and Math - all topics of the future. This video presents how Festo Didactic engages the learning of young people in relation to these topics.



Festo Learning Experience

Learning Path

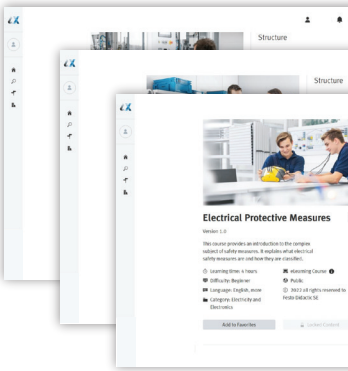


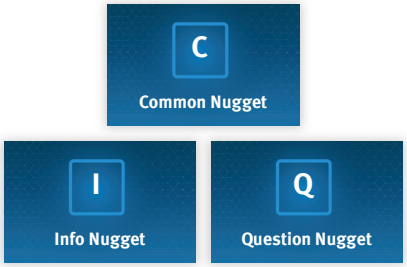


Learning Paths

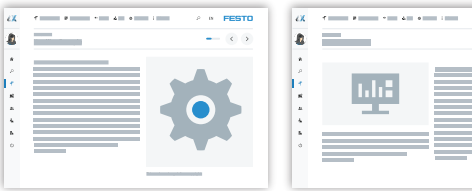


LX Courses





Learn Nuggets





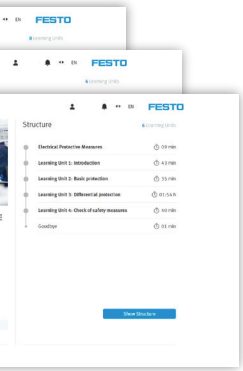
Electrical Protective Measures
eLearning course
by Festo

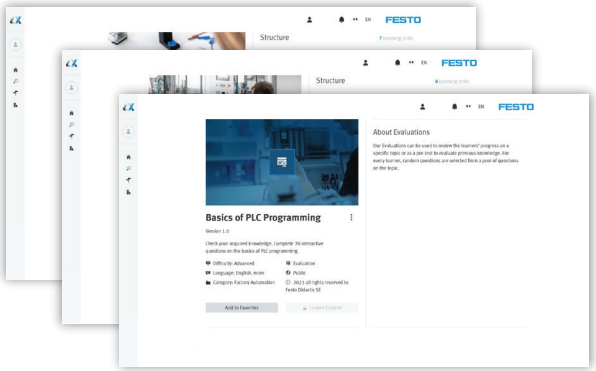


Wiring of an AC Motor
eLab course
by Festo

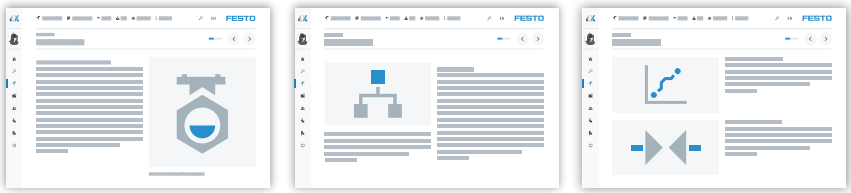


Basics of PLC
Evaluation
by Festo



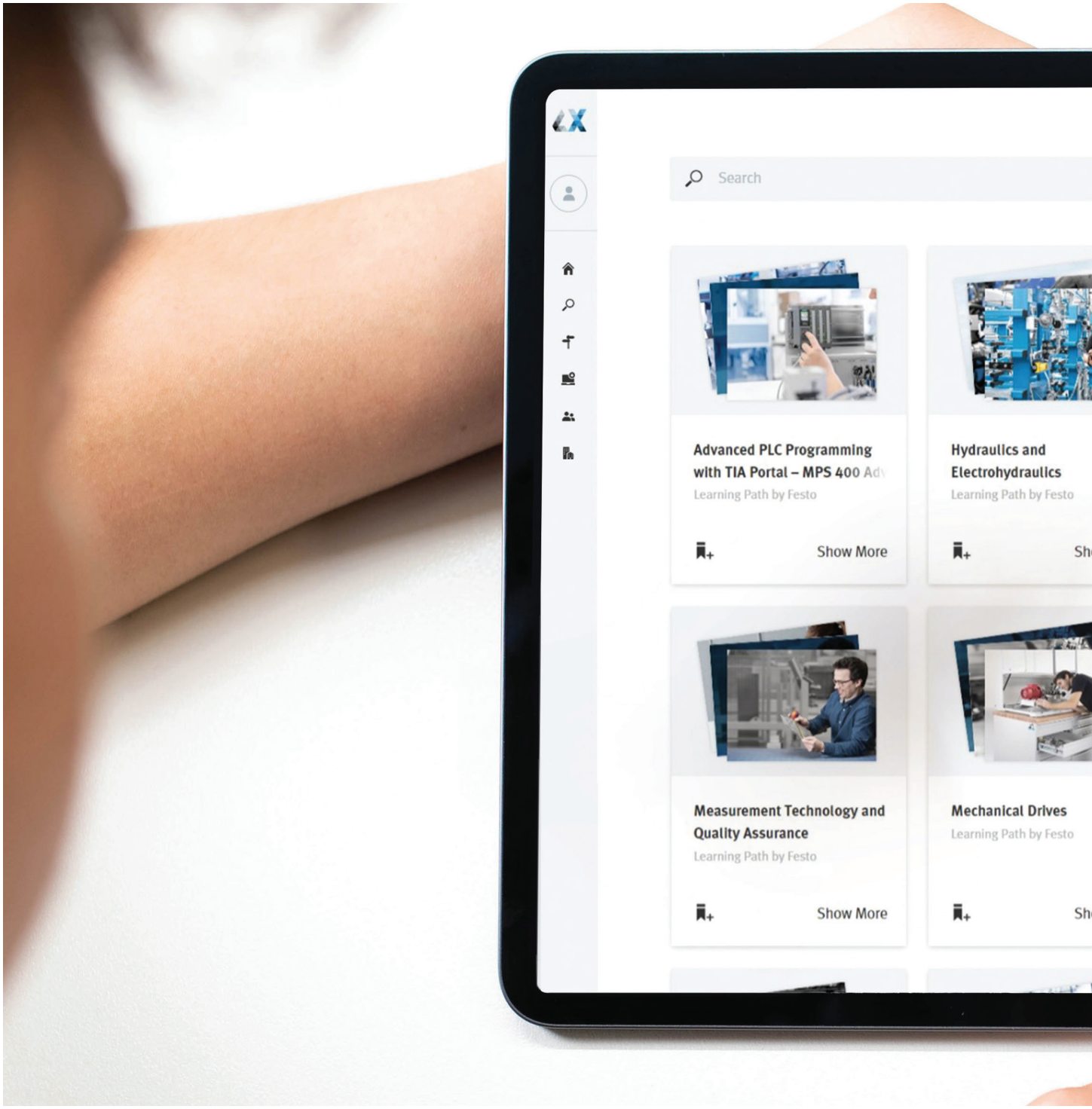


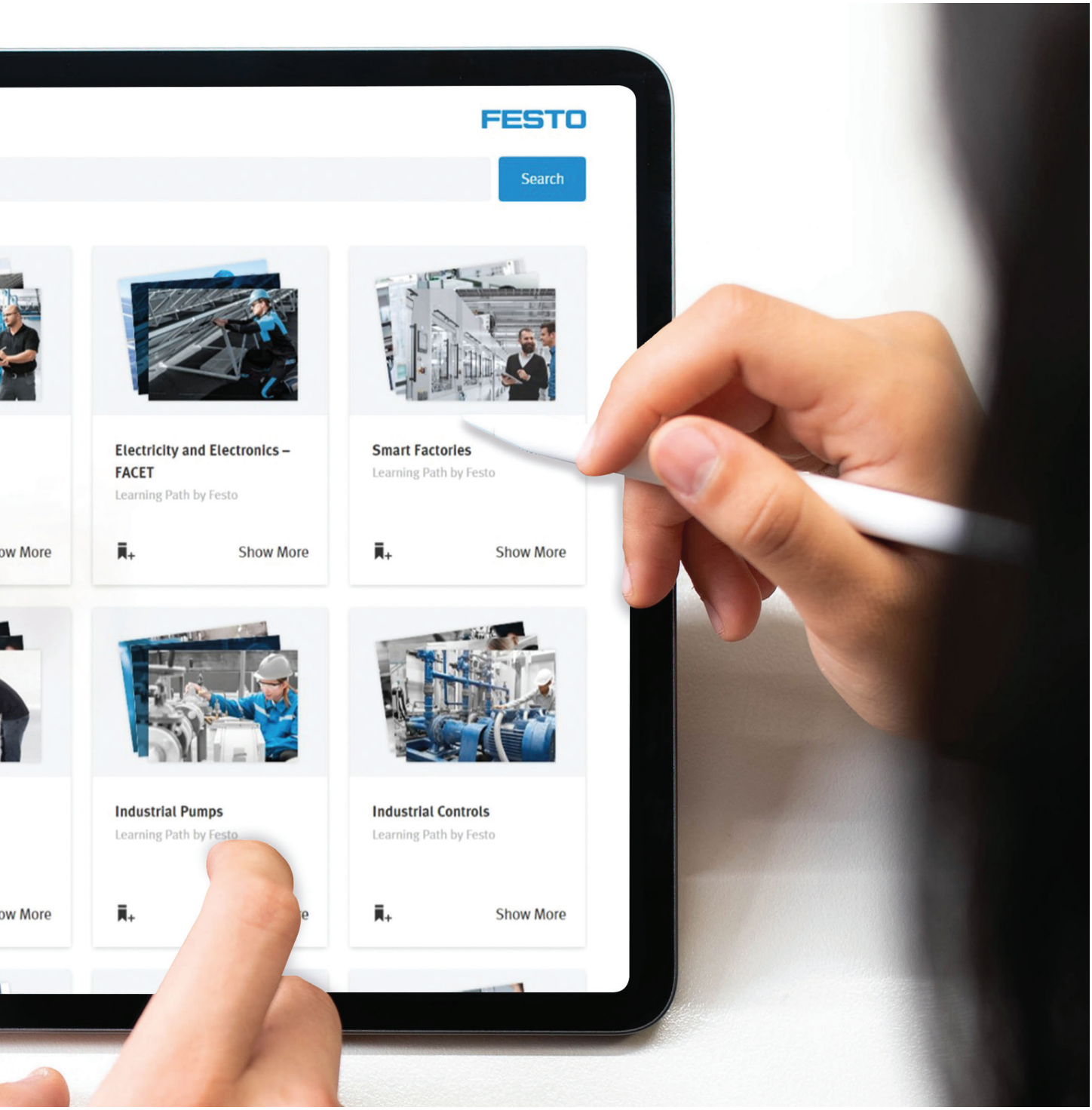




Festo Learning Experience

Learning Path

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Factory Automation

Learning Path

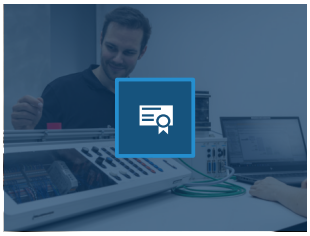
PLC Programming | SkillsConveyor











Build up your proficiency in programming programmable logic controllers (PLCs) through a combination of theoretical and hands-on learning. Become familiar with various logic functions and develop the ability to program a basic sequential control system. Use popular controllers such as LOGO! and Simatic S7 and apply your new knowledge to a hands-on learning system, the SkillsConveyor. Upon completion, you will possess the essential knowledge and hands-on experience needed to confidently program PLCs for a variety of industrial applications.

Factory Automation

Learning Path

Courses

- PLC Programming | eLearning Course
- LOGO! Training | eLearning Course
- GRAFCET | eLearning Course
- Basics of PLC Programming (LOGO!) with SkillsConveyor | eLab Course
- Basics of PLC Programming (LOGO!) with SkillsConveyor | Evaluation
- Basics of PLC Programming (S7) with SkillsConveyor | eLab Course
- Basics of PLC Programming (S7) with SkillsConveyor | Evaluation

To the Learning Path

Factory Automation

Learning Path

Advanced PLC Programming with TIA Portal | MPS 400



Discover a range of courses that will equip you with fundamental skills in automation engineering. Expand your knowledge of PLC programming. Get to know human-machine interfaces and machine-to-machine communication and use the functionalities for data storage and information exchange as an integral part of an intelligent automation solution. This learning path will provide you with impetus to advance your career in today's dynamic industrial landscape.

Factory Automation

Learning Path

Courses

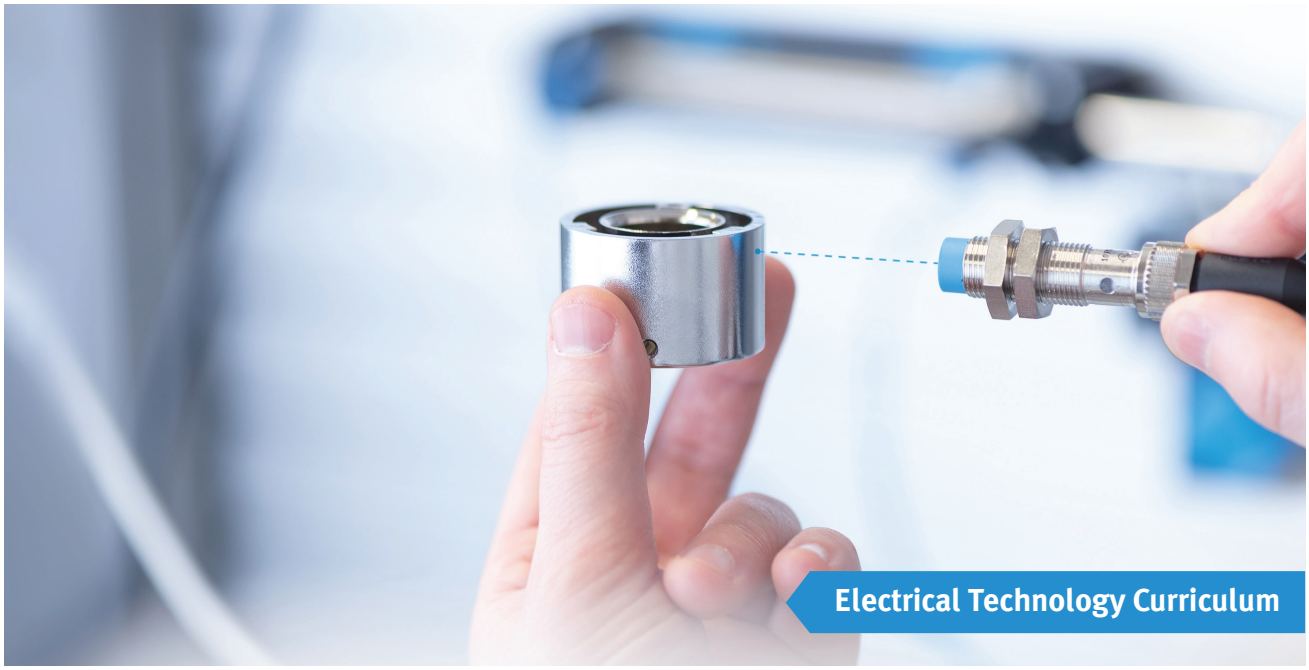
- Applied S7 Programming (MPS Sorting Inline) | eLab Course
- Applied S7 Programming (MPS Sorting Inline) | Evaluation
- From Object Identification to Product Memory with RFID | eLab Course
- Industrial Communication with PROFINET | eLab Course
- Plant Visualization with HMI | eLab Course
- PLC Programming for Smart Systems | eLab Course
- PLC Programming for Smart Systems | Evaluation

To the Learning Path

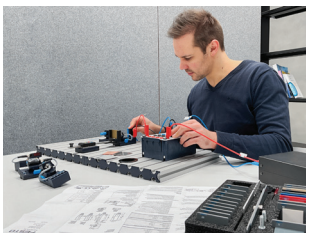
Factory Automation

Learning Path

Sensors and Smart Sensors











Embark on an exciting journey with the “Sensors and Smart Sensors” learning path. Start by exploring the basics of sensors in pneumatics and object detection, then dive into the world of smart sensors. Learn how to integrate these sensors with PLC systems and discover the latest advancements in industrial smart sensor technology. With practical training in Smart IO-Link interfaces, you’ll gain the knowledge and skills needed to excel in today’s industrial landscape. Elevate your expertise and stay ahead in the ever-evolving world of smart sensor technology.

Factory Automation

Learning Path

Courses

- Sensors in Pneumatics | eLearning Course
- Sensors for Object Sensing | eLearning Course
- Sensors for Object Detection | eLab Course
- Fundamental Principles of Smart Sensors | eLab Course
- Fundamental Principles of Smart Sensors | Evaluation
- PLC Integration of Smart Sensors | eLab Course
- Industrial Smart Sensors | eLab Course
- Industrial Smart Sensors | Evaluation
- Smart IO-Link Interface (P&F SmartBridge) | eLab Course
- Smart IO-Link Interface (ifm E30446) | eLab Course

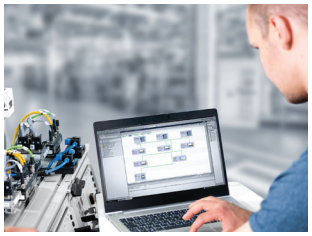
To the Learning Path

Factory Automation

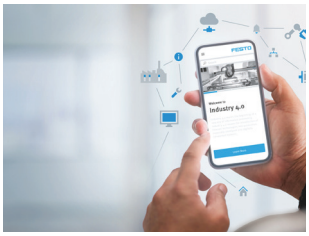
Learning Path

Networks and IT in Production











Dive into cutting-edge fieldbus technologies, master essential protocols like PROFINET and OPC-UA, and explore the innovative Communication Architecture of Industry 4.0. Enhance your expertise in network technology and fortify your IT security knowledge with quick, engaging courses. This comprehensive, hands-on journey covers all aspects of industrial communication, from mastering advanced protocols to implementing robust and efficient production systems. Equip yourself with the advanced skills needed to excel in modern industrial environments and stay ahead in the rapidly evolving landscape of Industry 4.0.

Factory Automation

Learning Path

Courses

- Fieldbus Technology | eLearning Course
- Industrial Communication with PROFINET | eLab Course
- Basics of PROFINET | Evaluation
- Industrial Communication with OPC-UA | eLab Course
- Industrial Communication with OPC-UA | Evaluatione
- AAS - Communication Architecture of I4.0 | eTheory Course
- IT-Security - Explained in 5 Minutes | eVideo
- IT-Security for Production Systems | eLab Course
- Basics of Network Technology | Evaluation

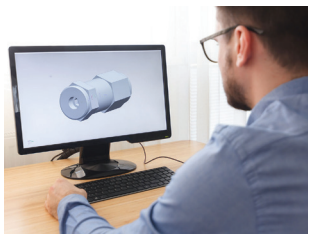
To the Learning Path

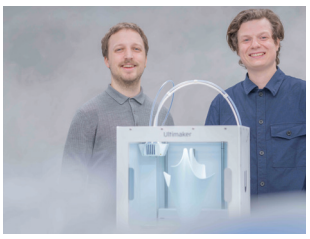
Factory Automation, Industrial Trades, MetalWorking

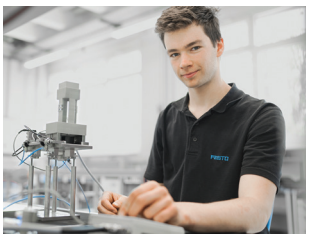
Learning Path

Additive Manufacturing and CAx-Systems











The Additive Manufacturing learning pathway covers the design and manufacture of components and includes the reading and interpretation of technical drawings and the schematic analysis of components. Students will learn to develop strategic plans for component designs and apply various CAD modeling strategies. Additive manufacturing processes are used in production and the quality of the components is checked. In addition, participants create standard-compliant technical drawings, fill in drawing headers and identify possible errors in order to critically reflect on the designs.

Factory Automation, Industrial Trades, MetalWorking

Learning Path

Courses

- Introduction to CAx Systems | eTheory Course
- Additive Manufacturing (SkillsMagazine Kit) | eLab Course
- Additive Manufacturing | Evaluation
- Basics of CAx Systems | Evaluation
- Additive Manufacturing Processes - Explained in 5 Minutes | eVideo
- Introduction to Additive Manufacturing | eTheory Course
- Basics of Additive Manufacturing | Evaluation
- Commissioning of the Stacking Magazine (SkillsMagazine Kit) | eLab Course

To the Learning Path

Factory Automation

Learning Path

Setup of Mechatronic Systems (Industry)











This learning path introduces the fundamentals of GRAFCET and its practical application in the commissioning of technical systems. Participants learn to read, create, and apply GRAFCET diagrams to describe and control sequential processes. They put this into practice by commissioning mechanical and electrical components, performing wiring, signal testing, and troubleshooting. The course concludes with a final assessment to verify understanding of GRAFCET logic, implementation, and safe commissioning procedures.

Factory Automation

Learning Path

Courses

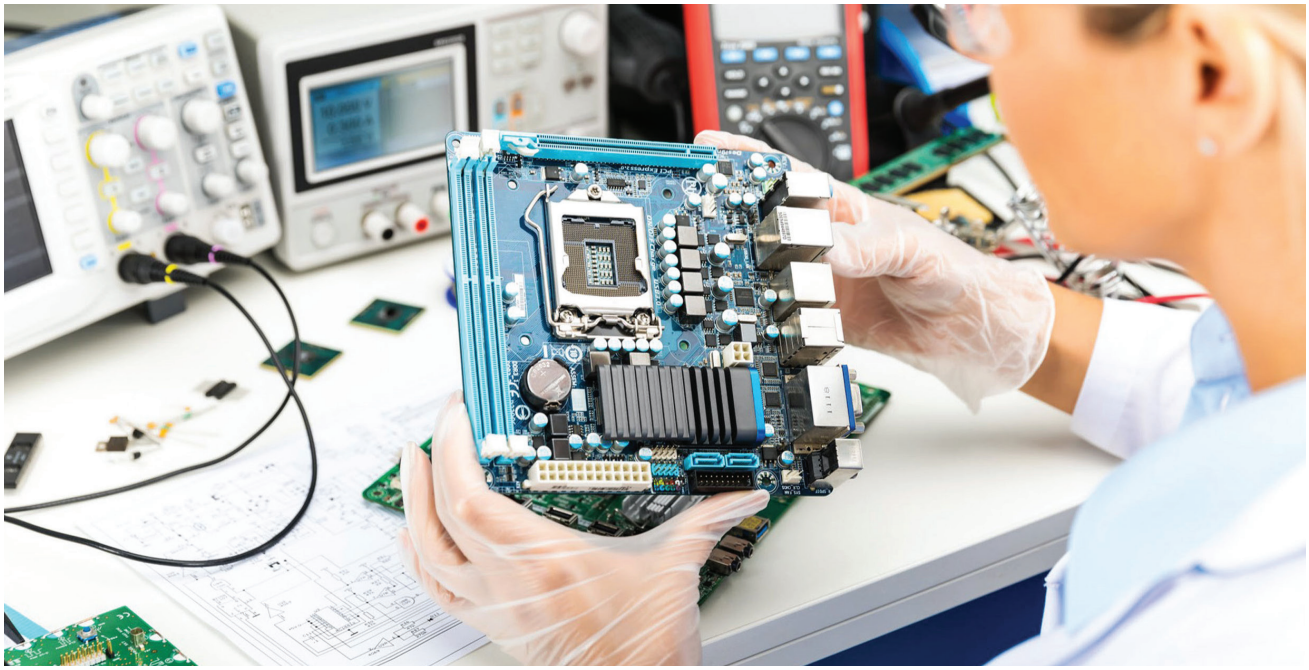
- GRAFCET | eLearning Course
- Commissioning the SkillsConveyor (unmounted) | eLab Course
- Commissioning of the SkillsConveyor | Evaluation

To the Learning Path

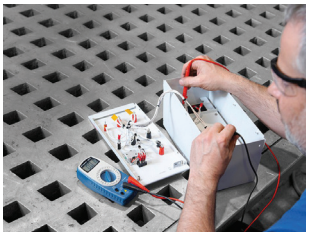
Electricity and Electronics

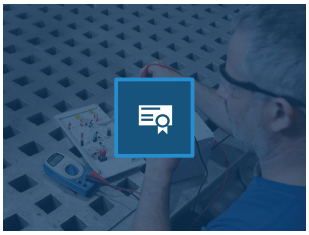
Learning Path

Electropneumatic Fundamentals









Introduces the fundamentals of DC electrical circuits through ten practical exercises. Participants learn to interpret and calculate key electrical variables such as voltage, current, resistance, energy, and power. The exercises cover resistor behavior, LED circuit design, power calculations, measurement techniques, and voltage divider applications. Additionally, participants gain insight into safety circuits using non-linear resistors (NTC, PTC, VDR), and learn how to design and analyze DC voltage sources and capacitor selection for fast charging applications.

Electricity and Electronics

Learning Path

Courses

- Electrics 1 - Circuits, Conductivity, Ohm’s Law | eLearning Course
- Fundamentals of Direct Current Technology | eLab Course
- DC Circuit Fundamentals | Evaluation

To the Learning Path

Factory Automation

Learning Path

Setup of Mechatronic Systems (Laboratory)







This learning path introduces the fundamentals of GRAFCET using the example of a conveyor system. Participants learn to read, create, and apply GRAFCET diagrams to describe and control sequential operations. The focus lies on the logical design, analysis, and simulation of control sequences related to conveyor systems. Practical tasks involve the planning, testing, and troubleshooting of control logic, without requiring mechanical or electrical setup. The course concludes with a final assessment to verify understanding of GRAFCET principles and their correct application.

Factory Automation

Learning Path

Courses

- GRAFCET | eLearning Course
- Commissioning of the SkillsConveyor (mounted) | eLab Course
- Commissioning of the SkillsConveyor | Evaluation

To the Learning Path

Factory Automation

Learning Path

Setup of Mechatronic Systems (Industry)







This learning path introduces the fundamentals of GRAFCET and its practical application in the commissioning of technical systems. Participants learn to read, create, and apply GRAFCET diagrams to describe and control sequential processes. They put this into practice by commissioning mechanical and electrical components, performing wiring, signal testing, and troubleshooting. The course concludes with a final assessment to verify understanding of GRAFCET logic, implementation, and safe commissioning procedures.

Factory Automation

Learning Path

Courses

- GRAFCET | eLearning Course
- Commissioning the SkillsConveyor (unmounted) | eLab Course
- Commissioning of the SkillsConveyor | Evaluation

To the Learning Path

Factory Automation

Learning Path

Hard-Wired Programmed Control (Industry)







This learning path introduces the basics of relay-based (hardwired) control systems, also known as hard-wired program control. Participants explore how logical functions such as AND, OR, and NOT are realized through relay circuits and physical wiring. In hands-on exercises, learners build and test control circuits using contactors, relays, push buttons, and limit switches. The course concludes with a theoretical assessment to verify understanding of circuit design, functionality, and fault finding in the system.

Factory Automation

Learning Path

Courses

- Hard-Wired Programmed Control with SkillsConveyor and Control Cabinet | eLab Course
- Basics of Electrical Engineering | Evaluation
- Basics of Electromagnetic Switching Devices | Evaluation

To the Learning Path

Factory Automation

Learning Path

AC Motor Control (Industry)







This learning path covers the fundamentals of electric drives, focusing on the theory of AC motors and their control principles. Participants gain a solid understanding of motor types, operation, and control concepts through theoretical lessons. In the practical course, learners wire and operate an AC motor control system using a control cabinet, applying knowledge of starters, protection devices, and control circuits. The pathway includes a dedicated test center where participants verify their skills in wiring and controlling AC motors, ensuring they can safely and correctly implement motor control tasks.

Factory Automation

Learning Path

Courses

- Electric Drives 1 | eLearning Course
- Electric Drives 2 | eLearning Course
- Wiring and Control of an AC Motor with SkillsConveyor and Control Cabinet | eLab Course
- Wiring and Control of an AC Motor | Evaluation

To the Learning Path

Factory Automation

Learning Path

Hard-Wired Programmed Control (Laboratory)







This learning path introduces the basics of relay-based (hardwired) control systems, also known as hard-wired program control. Participants explore how logical functions such as AND, OR, and NOT are realized through relay circuits and physical wiring. In hands-on exercises, learners build and test control circuits using training package, which simulate real components like contactors, relays, push buttons, and limit switches. The course concludes with a theoretical assessment to verify understanding of circuit design, functionality, and fault finding in the systems.

Factory Automation

Learning Path

Courses

- Hard-Wired Programmed Control with SkillsConveyor and TP | eLab Course
- Basics of Electrical Engineering | Evaluation
- Basics of Electromagnetic Switching Devices | Evaluation

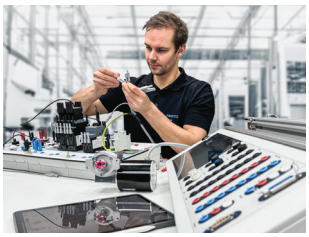
To the Learning Path

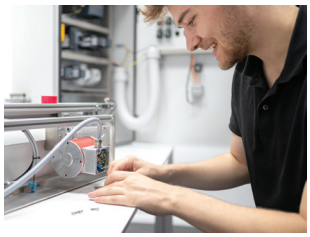
Factory Automation

Learning Path

AC Motor Control (Laboratory)









This learning pathway covers the fundamentals of electric drives, focusing on the theory of AC motors and their control principles. Participants gain a solid understanding of motor types, operation, and control concepts through theoretical lessons. In the practical course, learners wire and operate an AC motor control system using training package that simulate real control cabinets, including starters, protection devices, and control circuits. The pathway includes a dedicated test center where participants verify their skills in wiring and controlling AC motors, ensuring they can safely and correctly implement motor control tasks.

Factory Automation

Learning Path

Courses

- Electric Drives 1 | eLearning Course
- Electric Drives 2 | eLearning Course
- Wiring and Control of an AC Motor with SkillsConveyor and TP | eLab Course
- Wiring and Control of an AC Motor | Evaluation

To the Learning Path

Factory Automation

Learning Path

AC Motor Control (Laboratory) US Variant









This learning path covers the fundamentals of electric drives, focusing on the theory of AC motors and their control principles. Participants gain a solid understanding of motor types, operation, and control concepts through theoretical lessons. In the practical courses, learners first explore the basics of motor control technology, developing foundational skills in controlling motors and understanding key components. Following this, they wire and operate an AC motor control system using training packages that simulate real control cabinets, including starters, protection devices, and control circuits. The pathway includes a dedicated test center where participants verify their skills in wiring and controlling AC motors, ensuring they can safely and correctly implement motor control tasks.

Factory Automation

Learning Path

Courses

- Electric Drives 1 | eLearning Course
- Electric Drives 2 | eLearning Course
- Basic Motor Control Technology | eLab Course
- Basics of Motor Control with SkillsConveyor and Training Package 1221 | eLab Course
- Wiring and Control of an AC Motor | Evaluation

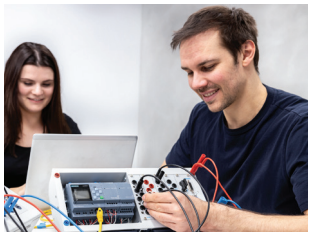
To the Learning Path

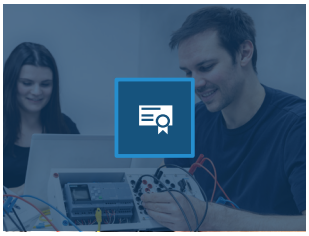
Factory Automation

Learning Path

Basics of PLC Programming LOGO!







This learning path provides an introduction to logic functions and digital control concepts using Siemens LOGO! as a practical platform. The theoretical content focuses on the fundamentals of Boolean logic, basic logic operations (AND, OR, NOT, etc.), and their role in programmable logic controllers (PLCs). In the practical course, participants apply their knowledge by programming basic control tasks with Siemens LOGO!, including simple input/output operations, timers, and logic combinations. The programming is performed using a training package designed for hands-on learning. The pathway concludes with a learning assessment, where participants demonstrate their understanding of logic operations and basic PLC programming with LOGO! in both theory and application.

Factory Automation

Learning Path

Courses

- LOGO! Training | eLearning Course
- Basics of PLC Programming (LOGO!) with SkillsConveyor | eLab Course
- Basics of PLC Programming (LOGO!) with SkillsConveyor | Evaluation

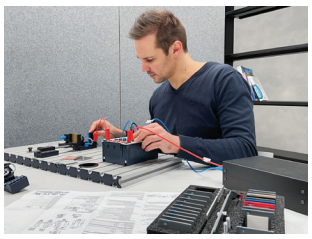
To the Learning Path

Factory Automation

Learning Path

Basics of Sensors







This learning path introduces the fundamentals of sensors for object sensing through a combination of theory and practice. In the theoretical module, participants explore different sensor types – such as inductive, capacitive, ultrasonic, and optical sensors – and learn how they function, where they are used, and how to select the right sensor for specific applications. In the practical course, learners work with real sensors to detect and evaluate objects under different conditions. They configure, position, and test sensors in realistic setups, analyzing signals and behavior. The pathway concludes with a test center, where participants demonstrate their knowledge of sensor types, signal evaluation, and correct application.

Factory Automation

Learning Path

Courses

- Sensors for Object Sensing | eLearning Course
- Sensors for Object Detection | eBook
- Basics of Sensors | Evaluation

To the Learning Path

Factory Automation

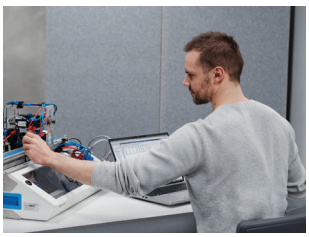
Learning Path

Basics and Applied PLC Programming S7











This learning path provides a structured introduction to PLC programming, combining theoretical foundations with hands-on practice on a conveyor system. It starts with a theory module covering basic PLC concepts, programming logic, and control structures. In the practical part, participants create and test simple control programs on a conveyor system. A learning assessment verifies their understanding. The second part introduces the theory of object detection sensors (e.g. inductive, capacitive, optical), followed by a practical module where learners integrate sensors into PLC programs and apply them directly to the conveyor system.

Factory Automation

Learning Path

Courses

- PLC Programming | eLearning Course
- Basics of PLC Programming (S7) with SkillsConveyor | eLab Course
- Basics of PLC Programming (S7) with SkillsConveyor | Evaluation
- Sensors for Object Sensing | eLearning Course
- Applied PLC Programming and Sensor Technology with SkillsConveyor | eLab Course

To the Learning Path

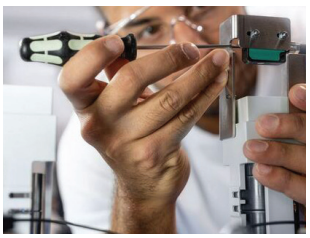
Factory Automation

Learning Path

PLC Programming for Smart Systems









This learning path covers the fundamentals of PLC programming with a focus on smart systems.
Participants start with theory on PLC programming and smart sensors, then apply their knowledge through practical tasks involving programming smart devices. The course emphasizes integration, control, and communication within smart automation systems. An evaluation at the end verifies understanding and correct application of PLC programming concepts for smart systems.

Factory Automation

Learning Path

Courses

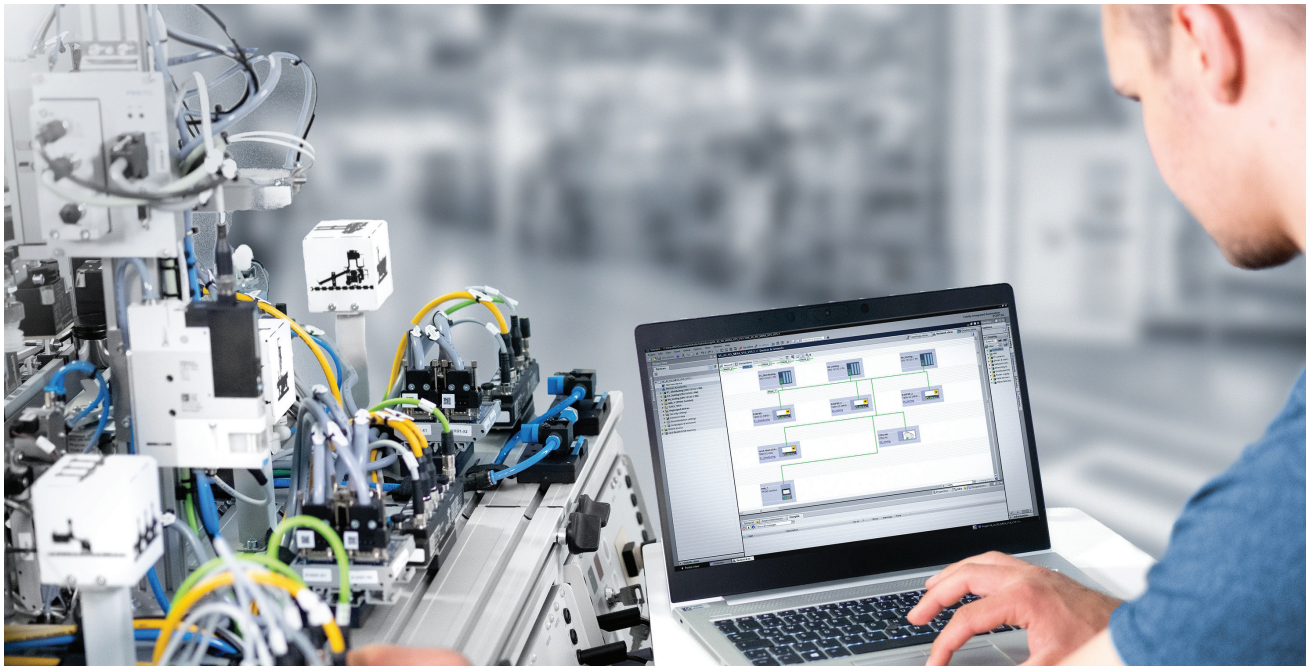
- PLC Programming | eLearning Course
- Smart Sensor – First Steps | User Guide
- PLC Programming for Smart Systems | eLab Course
- PLC Programming for Smart Systems | Evaluation

To the Learning Path

Factory Automation

Learning Path

Industrial Communication with PROFINET





This learning path provides a practical introduction to industrial communication using PROFINET. Participants work through hands-on tasks to configure and troubleshoot PROFINET-based systems in an automation context. The focus is on real-time data exchange, device integration, and network diagnostics. A final evaluation on PROFINET fundamentals verifies the participant's understanding and correct application of key concepts.

Factory Automation

Learning Path

Courses

- Industrial Communication with PROFINET | eLab Course
- Basics of PROFINET | Evaluation

To the Learning Path

Factory Automation

Learning Path

Industrial Communication with OPC UA





This learning path introduces the fundamentals of industrial communication using OPC UA. Through practical tasks, participants learn how to set up, configure, and use OPC UA for secure and standardized data exchange between machines and systems. The focus lies on real-world application in automation environments. An evaluation at the end ensures understanding of key OPC UA concepts and communication principles.

Factory Automation

Learning Path

Courses

- Industrial Communication with OPC-UA | eLab Course
- Industrial Communication with OPC-UA | Evaluation

To the Learning Path

Factory Automation

Learning Path

Plant Control and Commissioning with MES





This learning path offers a hands-on introduction to plant control and commissioning using MES (Manufacturing Execution Systems). Participants start with a quick video overview, then apply MES functions in practical tasks such as process control, order tracking, and data handling. The focus is on using MES to connect production and IT effectively. An evaluation on MES fundamentals confirms the participant's understanding of core concepts and their application.

Factory Automation

Learning Path

Courses

- Quick Start - MES | User Guide
- Plant Control and Commissioning with MES | eLab Course
- Basics of MES | Evaluation

To the Learning Path

Factory Automation

Learning Path

Energy Efficiency in Production







This learning path provides a practical introduction to energy efficiency in industrial environments. Participants explore key concepts through video content, system setup, and hands-on tasks such as integrating a vacuum ejector. The focus is on identifying savings potential and applying efficiency measures. A final evaluation confirms the understanding of energy efficiency fundamentals.

Factory Automation

Learning Path

Courses

- Energy Efficiency – Explained in 5 Minutes | eVideo
- Commissioning Energy Efficiency Package | User Guide
- Integration of the Vacuum Generator | User Guide
- Energy Efficiency in Production | eLab Course
- Basics of Energy Efficiency | Evaluation

To the Learning Path

Factory Automation

Learning Path

IT-Security for Production Systems









This learning path introduces core concepts of IT security with a focus on industrial and production environments. Participants begin with concise video content explaining basic cybersecurity principles and enabling technologies such as Big Data, Cloud, and Cybersecurity. Building on this foundation, the course offers practical tasks that address common security challenges in production systems, including risk identification, network protection, and secure system configuration. A final evaluation on network fundamentals ensures the understanding and correct application of security principles in industrial contexts.

Factory Automation

Learning Path

Courses

- IT-Security - Explained in 5 Minutes | eVideo
- Enabling Technologies - Big Data, Cloud & Cybersecurity | eVideo
- IT-Security for Production Systems | eLab Course
- Basics of Network Technology | Evaluation

To the Learning Path

Factory Automation

Learning Path

Mobile and Autonomous Robotics







This learning path provides a practical introduction to mobile and autonomous robotics using Robotino 4. Participants start with robotics fundamentals, then apply them through hands-on tasks in navigation, sensing, and control logic. The focus is on programming, testing, and troubleshooting autonomous behavior in simulation and on real hardware. The course ends with an evaluation to verify the correct understanding and application of robotics concepts.

Factory Automation

Learning Path

Courses

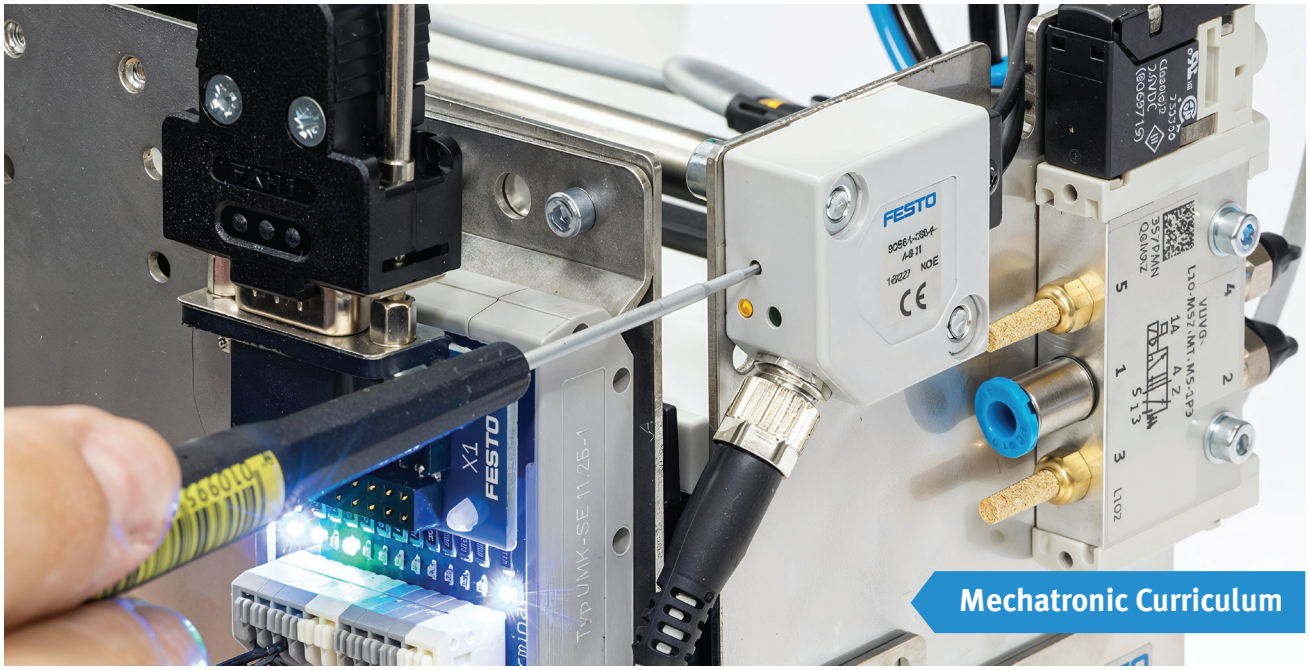
- Introduction to Robotics | eTheory Course
- Autonomous Mobile Robotics with Robotino 4 | eLab Course
- Basics of Robotics | Evaluation

To the Learning Path

Factory Automation

Learning Path

Basics of Sensors and Actuators





This learning path provides a practical introduction to the function and application of sensors and actuators in automation. Participants complete hands-on tasks to explore how different sensor and actuator types are used in industrial environments. An evaluation on sensor fundamentals confirms the understanding of key concepts and their correct application.

Factory Automation

Learning Path

Courses

- Applied Sensors and Actuators | eLab Course
- Basics of Sensors | Evaluation

To the Learning Path

Factory Automation

Learning Path

From Object ID to Product Memory with RFID







This learning path introduces the use of RFID technology for object identification and digital product memory in production environments. Participants begin with theoretical content on RFID fundamentals, followed by practical tasks to implement RFID-based tracking and data storage solutions. The course concludes with an evaluation to confirm understanding of RFID applications in smart manufacturing.

Factory Automation

Learning Path

Courses

- Introduction to Robotics | eTheory Course
- Autonomous Mobile Robotics with Robotino 4 | eLab Course
- Basics of Robotics | Evaluation

To the Learning Path

Factory Automation

Learning Path

Plant Visualization with HMI





This learning path introduces the basics of plant visualization using Human Machine Interfaces (HMI). Through practical tasks, participants design and implement HMI screens to monitor and control production processes. The course concludes with an evaluation to confirm understanding of HMI principles and their application in industrial environments.

Factory Automation

Learning Path

Courses

- Plant Visualization with HMI | eLab Course
- Basics of Plant Visualization with HMI | Evaluation

To the Learning Path

Factory Automation

Learning Path

Basics of Machine Safety





This learning path provides an introduction to essential machine safety principles. Participants begin with theoretical content on safety awareness, followed by practical tasks focused on implementing safety measures. The course ends with an evaluation to verify understanding of fundamental machine safety concepts and practices.

Factory Automation

Learning Path

Courses

- Machine Safety Awareness | eLearning Course
- Machine Safety | eBook
- Basics of Machine Safety | Evaluation

To the Learning Path

Factory Automation

Learning Path

Smart Maintenance







This learning path introduces the concept of smart maintenance in modern production. Participants start with a short video explaining smart maintenance principles, followed by practical tasks focusing on transitioning from traditional to smart maintenance strategies. The course concludes with an evaluation to confirm understanding and application of smart maintenance concepts.

Factory Automation

Learning Path

Courses

- Smart Maintenance – Explained in 5 Minutes | eVideo
- From Maintenance to Smart Maintenance | eTheory Course
- From Maintenance to Smart Maintenance | Evaluation

To the Learning Path

Factory Automation

Learning Path

Basics of PLC Programming







This learning path introduces the fundamentals of PLC programming. Participants start with theoretical content on PLC basics, followed by practical tasks focused on applied S7 programming. The course concludes with an evaluation to verify understanding of core PLC programming principles.

Factory Automation

Learning Path

Courses

- PLC Programming | eLearning Course
- Applied S7 Programming | eLab Course
- Basics of PLC Programming | Evaluation

To the Learning Path

IIoT and Industry 4.0

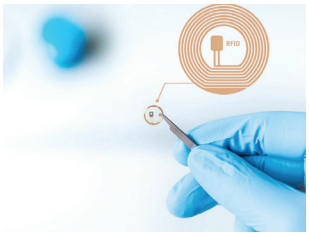
Learning Path

Smart Factories











Gain essential skills to succeed in automation technology and smart maintenance. First, learn more about the ongoing industrial change before diving into the systematic description of control processes. Then get to know the configuration of different automation devices in order to learn PLC programming based on this step by step using simple examples. Expand your knowledge of technologies for data storage and information exchange, human-machine interfaces and production planning and integrate them into your programs. Immerse yourself in the world of robotics and learn how to operate and program it in a production environment. Finally, discover the path from classic maintenance to smart maintenance and deepen your understanding of the underlying concepts.

IIoT and Industry 4.0

Learning Path

Courses

- Introduction to Industry 4.0 | eLearning Course
- Industry 4.0 in Production | Learning Video
- GRAFCET | eLearning Course
- PLC Programming CP Lab | eBook*
- PLC Programming CP Lab | eBook*
- Introduction to RFID Technology | eTheory Course
- Object Identification with RFID | eBook
- HMI - Operation and Visualization | eBook
- PLC Programming for I4.0 Systems | eBook
- Production Planning and Control | eBook
- Robotics | Learning Video
- Introduction to Robotics | eTheory Course
- Robot Assembly | eBook
- Cobots | Learning Video
- From Maintenance to Smart Maintenance | eBook

*Optional

To the Learning Path

IIoT and Industry 4.0

Learning Path

Sustainable Manufacturing









Explore the heart of sustainability, focusing on energy efficiency in manufacturing. Learn the fundamentals of sustainability and why they are important in today's industry. Discover ways to boost energy efficiency, especially in production. Get practical tips and tools to reduce energy waste in manufacturing, so you can help build a greener future for the industry.

IIoT and Industry 4.0

Learning Path

Courses

- Sustainability – What Is It All About? | eLearning Course
- Energy Efficiency - Explained in 5 Minutes | Learning Video
- Energy Efficiency in Production | eLab Course
- Basics of Energy Efficiency | Evaluation

To the Learning Path

IIoT and Industry 4.0, Organization and People

Learning Path

Introduction to Industry 4.0 and Emerging Technologies











Embark on a journey into the future of Industry 4.0. Immerse yourself in the captivating world of emerging technologies that are reshaping the very fabric of the industrial landscape. Our experts will be your trusted guides, providing clear and concise explanations that make even the most complex concepts a breeze to understand. Prepare to uncover the secrets of workplace organization, value stream analysis and design, and continuous improvement methods like 5S and Poka Yoke. These invaluable skills will empower you to optimize processes and drive efficiency like never before. And let's not forget about the ever-pressing issue of IT security. We'll equip you with the knowledge and strategies to navigate the digital landscape of Industry 4.0 with confidence and peace of mind.

IIoT and Industry 4.0, Organization and People

Learning Path

Courses

- Introduction to Industry 4.0 | eLearning Course
- The four Industrial Revolutions - Explained in 5 Minutes | eVideo
- Industry 4.0 in Production - Explained in 5 Minutes | eVideo
- 5S – Workstation organization | eLearning Course
- Value stream analysis and mapping | eLearning Course
- Poka Yoke | eLearning Course
- IT-Security - Explained in 5 Minutes | eVideo
- Blockchain - Explained in 5 Minutes | eVideo
- Machine Learning – Explained in 5 Minutes | eVideo
- Deep Learning – Explained in 5 Minutes | eVideo
- Artificial Intelligence – Explained in 5 Minutes | eVideo

To the Learning Path

IIoT and Industry 4.0, Organization and People

Learning Path

Industry 4.0 and Advanced Manufacturing Technologies











Get ready for a deep dive into the fundamental principles of Industry 4.0 and how it's revolutionizing the manufacturing landscape. Explore a wide range of advanced manufacturing technologies for seamless control and commissioning of installations. Uncover the enabling technologies that are driving this transformation, from Big Data to additive manufacturing. Our experts will guide you through these exciting topics, providing a comprehensive understanding of the future of manufacturing.

IIoT and Industry 4.0, Organization and People

Learning Path

Courses

- Industrial Safety in the Workplace | eTheory Course
- Introduction to Lean Production | eTheory Course
- Basics of Production Control | eTheory Course
- Enabling Technologies - Big Data, Cloud & Cybersecurity | eVideo
- TPM – Total Productive Maintenance | eLearning Course
- From Maintenance to Smart Maintenance | eTheory Course
- Introduction to RFID Technology | eTheory Course
- Introduction to Robotics | eTheory Course
- Introduction to Collaborative Robotics (HRC) | eTheory Course
- Enabling Technologies - Artificial Intelligence, Cobots & CP Systems | eVideo
- Enabling Technologies - Augmented Reality & AGVs | eVideo
- Introduction to Additive Manufacturing | eTheory Course

To the Learning Path

Electricity and Electronics

Learning Path

Electricity and Electronics | FACET











Embark on a journey through the fundamental concepts of electricity and electronics with Festo's FACET program. This comprehensive learning path is meticulously crafted to equip you with hands-on skills and theoretical knowledge in Direct Current (DC) fundamentals, Alternating Current (AC) theory, semiconductor applications, and much more. Each eLab course offers a deep dive into essential topics like DC network theorems, transistor dynamics, and power regulation, ensuring a robust understanding of electronic systems. Complementing each eLab course, evaluations provide the chance to test your knowledge and track your progress. The program also covers Field Effect Transistor (FET) principles, operational amplifier fundamentals, and the intriguing world of magnetism and electromagnetism.

Electricity and Electronics

Learning Path

Courses

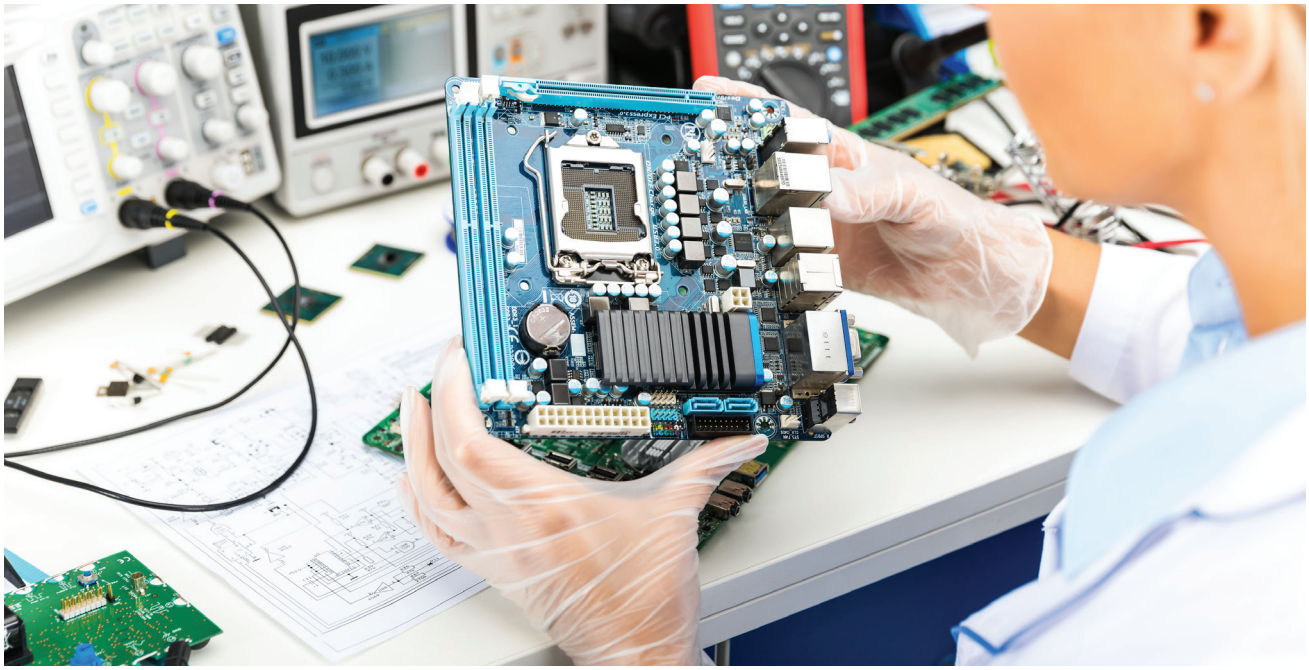
- FACET – DC Fundamentals | eLab Course
- DC Fundamentals (FACET) | Evaluation
- FACET – DC Network Theorems | eLab Course
- DC Network Theorems (FACET) | Evaluation
- FACET – AC Fundamentals 1 | eLab Course
- AC Fundamentals 1 (FACET) | Evaluation
- FACET – AC Fundamentals 2 | eLab Course
- AC Fundamentals 2 (FACET) | Evaluation
- FACET – Semiconductor Fundamentals | eLab Course
- Semiconductor Fundamentals (FACET) | Evaluation
- FACET – Transistor Amplifier Circuits | eLab Course
- Transistor Amplifier Circuits (FACET) | Evaluation
- FACET – Transistor Power Amplifiers | eLab Course
- Transistor Power Amplifiers (FACET) | Evaluation
- FACET – Transistor Feedback Circuits | eLab Course
- Transistor Feedback Circuits (FACET) | Evaluation
- FACET – Power Supply Regulators | eLab Course
- Power Supply Regulators (FACET) | Evaluation
- FACET – FET Fundamentals | eLab Course
- FET Fundamentals (FACET) | Evaluation
- FACET – Operational Amplifier Fundamentals | eLab Course
- Operational Amplifier Fundamentals (FACET) | Evaluation
- FACET – Operational Amplifier Applications | eLab Course
- Operational Amplifier Applications (FACET) | Evaluation
- FACET – Magnetism and Electromagnetism | eLab Course
- Magnetism and Electromagnetism (FACET) | Evaluation

To the Learning Path

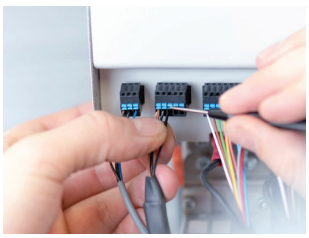
Electricity and Electronics

Learning Path

Electricity and Electronics | TP 1011











Dive into the electrifying world of circuits and systems, start with an eLearning course on Electrics 1, where you'll untangle the mysteries of circuits, conductivity, and Ohm's Law. Build upon your skills with hands-on eLab sessions in Direct Current Technology, understanding the magic behind electric charges, capacitors, and coils. Switch the current, and the mode of learning, as you alternate between interactive eLearning and engaging eLab courses to grasp Alternating Current Technology. Explore the semiconductor universe with eLearning courses that detail diodes, transistors, thyristors, signal types, and the marvels of integrated circuits. Each eLab course gives you the opportunity to apply what you've learned, solidifying your knowledge through practical experimentation in semiconductor fundamentals and basic electronic circuits.

Electricity and Electronics

Learning Path

Courses

- Electrics 1 - Circuits, Conductivity, Ohm’s Law | eLearning Course
- Fundamentals of Direct Current Technology | eLab Course
- Electrics 2 - Electric Charge, Capacitors, Coils | eLearning Course
- Fundamentals of Alternating Current Technology | eLab Course
- Electronics 1 - Semiconductors, Diodes, Transistors | eLearning Course
- Electronics 2 - Thyristors, Signal Types, Integrated Circuits | eLearning Course
- Fundamentals of Semiconductors | eLab Course
- Basic Electronics Circuits | eLab Course

To the Learning Path

Electricity and Electronics

Learning Path

Digital and Microprocessor Electronics











Unleash your potential in the digital realm with Festo's Digital and Microprocessor Electronics pathway. Master Digital Logic with hands-on eLab courses and validate your prowess in evaluative tests. Progress to Digital Circuit Fundamentals, diving into the architecture that powers technology. Conquer 32-bit Microprocessors, the brains behind complex systems, and develop your own with Microcontroller System Development eLabs. Cap it off with Digital Signal Processing, a skill essential in our digital world. Prepare to innovate and lead in the tech-driven future.

Electricity and Electronics

Learning Path

Courses

- FACET – Digital Logic Fundamentals SMT | eLab Course
- Digital Logic Fundamentals SMT (FACET) | Evaluation
- FACET – Digital Circuit Fundamentals 1 | eLab Course
- Digital Circuit Fundamentals 1 (FACET) | Evaluation
- FACET – Digital Circuit Fundamentals 2 | eLab Course
- Digital Circuit Fundamentals 2 (FACET) | Evaluation
- FACET – 32-Bit Microprocessor | eLab Course
- 32-Bit Microprocessor (FACET) | Evaluation
- FACET – Microcontroller System Development | eLab Course
- Microcontroller System Development (FACET) | Evaluation
- FACET – Digital Signal Processor | eLab Course
- Digital Signal Processor (FACET) | Evaluation

To the Learning Path

Electricity and Electronics

Learning Path

Industrial Electronics











Forge ahead in the field of Industrial Electronics with Festo's targeted pathway. Start with Transducer Fundamentals eLab courses, exploring sensor technology's role in automation. After each hands-on session, test your skills with an evaluation. Next, dive into Motors, Generators, and Controls, where DC systems come alive under your command. Understand the might of Power Transistors and GTO Thyristors, components that drive modern industry. Finally, control the power with Thyristor and Power Control Circuits eLab courses. This journey empowers you with the expertise to make an impact in the industrial world.

Electricity and Electronics

Learning Path

Courses

- FACET – Transducer Fundamentals | eLab Course
- Transducer Fundamentals (FACET) | Evaluation
- FACET – Motors, Generators, and Controls (DC Motor Rev. A) | eLab Course
- Motors, Generators, and Controls (DC Motor Rev. A) (FACET) | Evaluation
- FACET – Power Transistors and GTO Thyristors | eLab Course
- Power Transistors and GTO Thyristors (FACET) | Evaluation
- FACET – Thyristor and Power Control Circuits | eLab Course
- Thyristor and Power Control Circuits (FACET) | Evaluation

To the Learning Path

Electricity and Electronics

Learning Path

Communications Systems











Step into the dynamic world of Communications Systems with Festo's specialized courses. Begin by demystifying Analog Communications through eLab courses, followed by assessments to track your learning curve. Progress into the digital age with Digital Communications 1 and 2, mastering the signals that connect our world. Peer into the future with Fiber Optic Communications eLabs, handling the medium that powers high-speed data transfer. Grasp the backbone of connectivity in Communications Transmission Lines courses. Conclude with the advanced topic of Quadrature Phase-Shift Keying (QPSK), essential for modern communication networks. Equip yourself to excel in the ever-evolving communications sector.

Electricity and Electronics

Learning Path

Courses

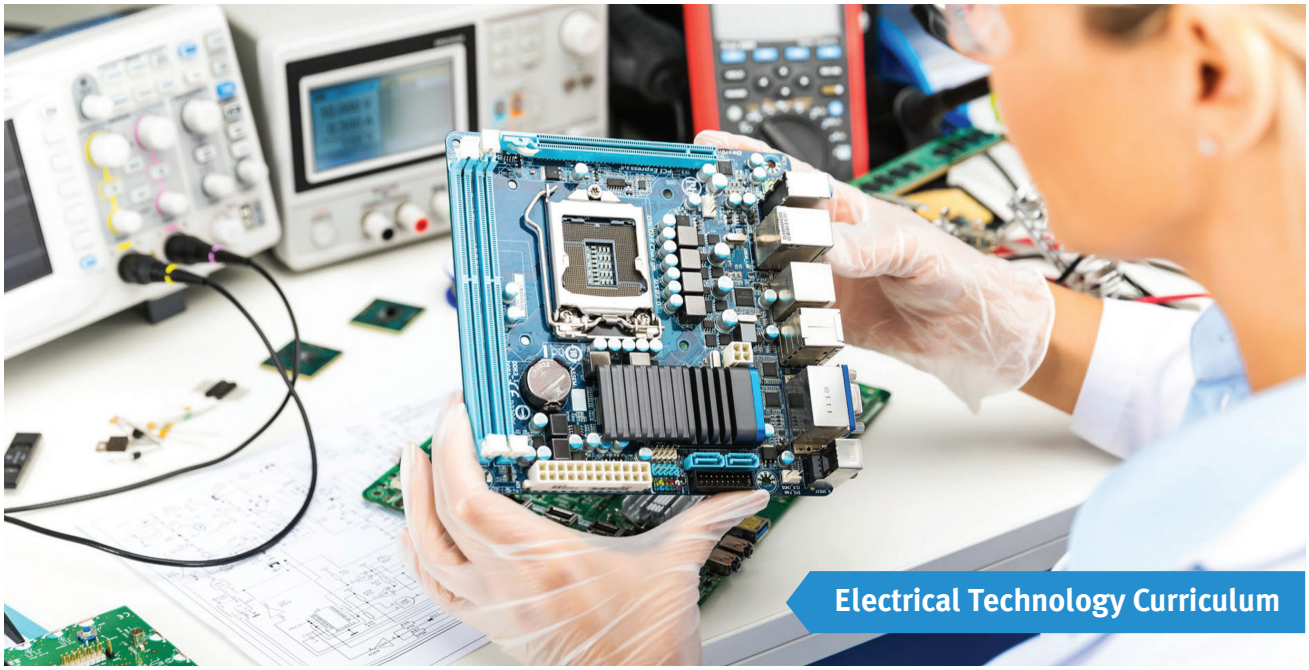
- FACET – Analog Communications | eLab Course
- Analog Communications (FACET) | Evaluation
- FACET – Digital Communications 1 | eLab Course
- Digital Communications 1 (FACET) | Evaluation
- FACET – Digital Communications 2 | eLab Course
- Digital Communications 2 (FACET) | Evaluation
- FACET – Fiber Optic Communications | eLab Course
- Fiber Optic Communications (FACET) | Evaluation
- FACET – Communications Transmission Lines | eLab Course
- Communications Transmission Lines (FACET) | Evaluation
- FACET – Quadrature Phase-Shift Keying (QPSK) | eLab Course

To the Learning Path

Electricity and Electronics

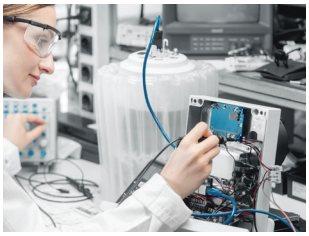
Learning Path

Basic Electricity - Electeo











Embark on a comprehensive journey through electrical engineering with the Basic Electricity learning path. Begin by exploring the principles of closed circuits, electrical conductivity, and Ohm's Law, along with practical applications of voltage supplies and resistors. Enhance your skills in circuit measurement using a multimeter and develop your understanding of essential components such as resistors and LEDs. Transition from direct current (DC) to alternating current (AC) concepts, covering sine wave characteristics, phase angles, and the roles of capacitors and inductors. Dive into the principles of magnetism and electromagnetism, gaining a well-rounded foundation in electrical knowledge. By completing this learning path, you will be equipped with the essential skills needed for a successful career in the field of electrical engineering.

Electricity and Electronics

Learning Path

Courses

- Electrics 1 - Circuits, Conductivity, Ohm's Law | eLearning Course
- Electrics 2 - Electric Charge, Capacitors, Coils | eLearning Course
- Measurement of a Circuit with a Multimeter - How Tool | eVideo
- DC Fundamentals | eLab Course
- DC Fundamentals | Evaluation
- AC Fundamentals | eLab Course
- AC Circuit Fundamentals | Evaluation
- Capacitors and Inductors | eLab Course
- Capacitors and Inductors | Evaluation
- Impedance | eLab Course
- Impedance | Evaluation
- Magnetism and Electromagnetism | eLab Course
- Magnetism and Electromagnetism | Evaluation Course

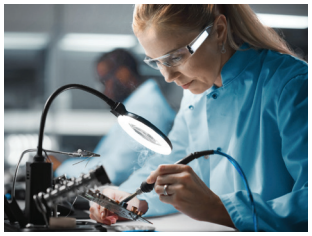
To the Learning Path

Electricity and Electronics

Learning Path

Basic Electronics - Electeo







Dive into the essential world of electronics with the Basic Electronics learning path. Explore the fundamentals of diodes and their role in rectifier circuits to build a solid foundation in these critical components. Advance your understanding of bipolar junction transistors (BJTs), focusing on their construction, characteristics, and configurations for optimal operation as current-control devices and electronic switches. Learn how to implement BJTs in circuits for voltage and current amplification. Throughout this learning path, you will also develop troubleshooting skills for BJT circuits, employing a structured approach to identify and resolve issues. By the end, you will be equipped with the essential knowledge and skills needed to excel in the field of electronics.

Electricity and Electronics

Learning Path

Courses

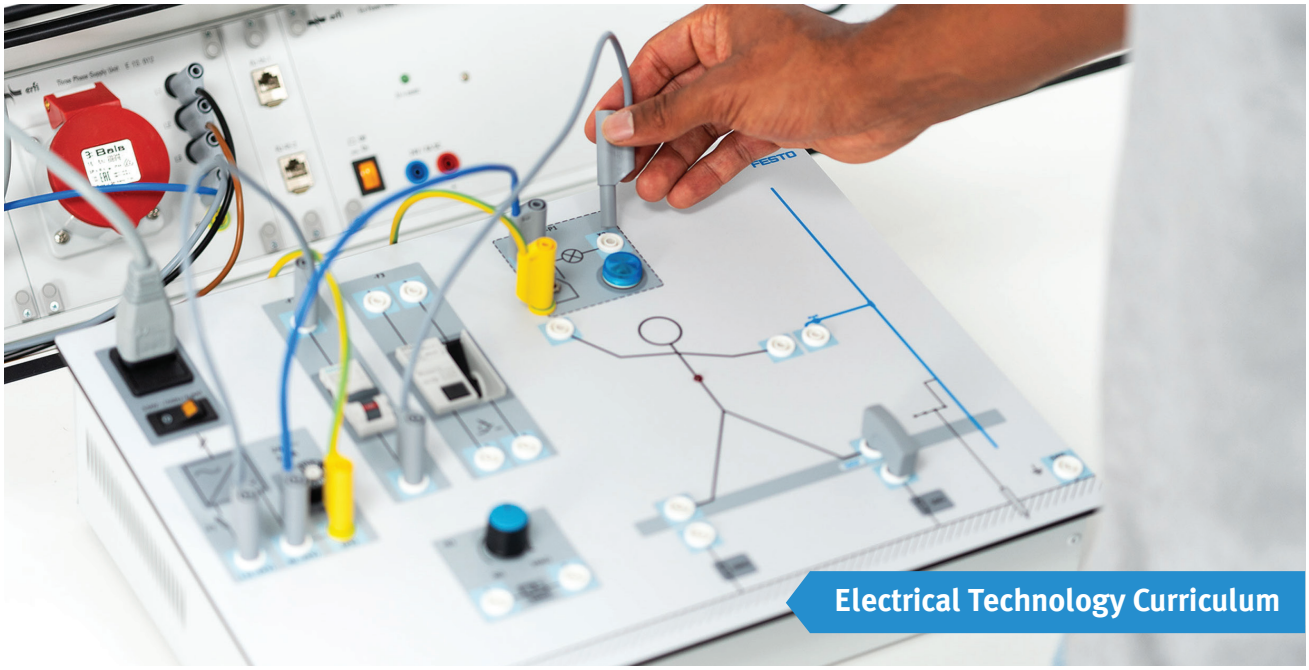
- Diodes and Rectifier Circuits | eLab Course
- Diodes and Rectifier Circuits | Evaluation
- BJT Fundamentals and Basic Circuits | eLab Course
- BJT Fundamentals and Basic Circuits | Evaluation

To the Learning Path

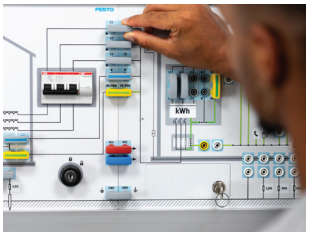
Electricity and Electronics

Learning Path

Electrical and Industrial Safety - EU







Embark on the Electrical and Industrial Safety - EU learning path to gain comprehensive knowledge and skills in electrical safety and protective measures within industrial environments. This program provides an introduction to the complex subject of electrical safety measures, explaining their classification and importance. Learn the basic principles of protective measures in the field of electricity through practical applications. Additionally, delve into the fundamentals of power supply systems and protective measures, gaining hands-on experience and understanding. By completing this learning path, you will be equipped with the knowledge and expertise necessary to implement effective electrical safety measures, ensuring a safer industrial environment and reducing the risk of electrical hazards.

Electricity and Electronics

Learning Path

Courses

- Electrical Protective Measures - EduTrainer | eLab Course
- Electrical Protective Measures | eLearning Course
- Power Supply Systems and Protective Measures | eLab Course

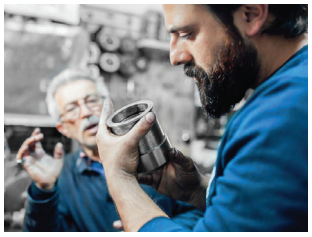
To the Learning Path

Electric Power Technology

Learning Path

Industrial Controls











Embark on a journey to control mastery with Festo's Industrial Controls courses. Kick off with the Basic Motor Controls, Programmable Logic Controllers, and Motor Drives in the 8036 Series eLab courses, where hands-on learning brings complex concepts to life. Fine-tune your technical acumen with the Sensors course, essential for automated systems. Conclude with Troubleshooting Industrial Controls, arming yourself with the skills to diagnose and fix with precision. This path is your blueprint for becoming an industrial controls expert.

Electric Power Technology

Learning Path

Courses

- Industrial Controls Training Systems | User Guide
- Basic Motor Controls – 8036 Series | eLab Course
- Programmable Logic Controller – 8036 Series | eLab Course
- Motor Drives – 8036 Series | eLab Course
- Sensors – 8036 Series | eLab Course
- Troubleshooting Industrial Controls | eLab Course

To the Learning Path

Electric Power Technology

Learning Path

Motor Control Systems and Drives











Power up your knowledge with Festo's Motor Control Systems and Drives curriculum. Start with Electric Drives eLearning courses for a comprehensive understanding of drive technology. Transition to hands-on exploration with eLab courses covering Fundamentals of Circuits, AC and DC Machines, and the complexities of Three-Phase Current Machines. Uncover the intricacies of Slip-Ring Motors in a dedicated eLab. Delve into the eTheory course on Speed Control using Frequency Converters, merging theory with practice as you conclude with a practical eLab. This pathway gears you towards technical fluency in motor control and drive systems.

Electric Power Technology

Learning Path

Courses

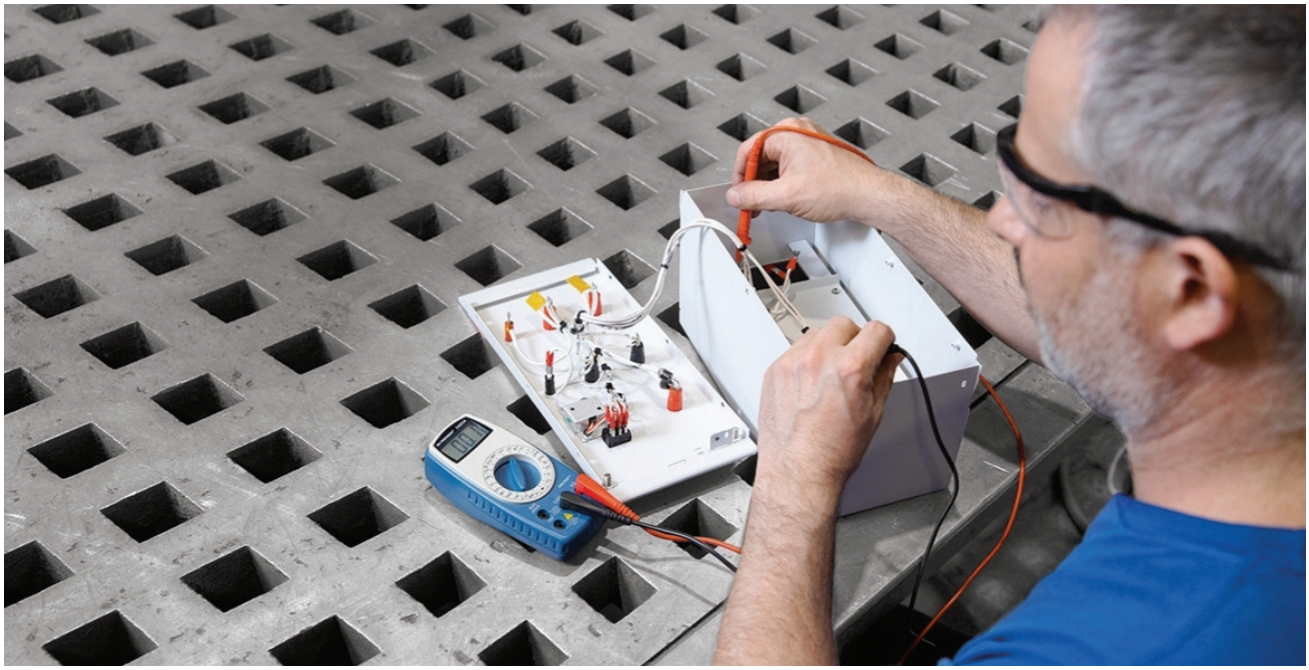
- Electric Drives 1 | eLearning Course
- Electric Drives 2 | eLearning Course
- Fundamentals of Circuits with Contacts | eLab Course
- Fundamentals of AC Machines | eLab Course
- Fundamentals of DC Machines | eLab Course
- Fundamentals of Three-Phase Current Machines | eLab Course
- Speed Control of Three-Phase Asynchronous Motors with Frequency Converters | Evaluation
- Speed Control of Three-Phase Asynchronous Motors with Frequency Converters | eLab Course

To the Learning Path

Electric Power Technology

Learning Path

Fundamentals of AC/DC Circuits







Discover the core of electrical power technology with Festo's Fundamentals of AC/DC Circuits courses. Engage with DC Circuit Fundamentals through interactive eLab sessions and put your knowledge to the test with subsequent evaluations. Then, alternate your focus to AC Circuit Fundamentals with another hands-on eLab, followed by an evaluation to assess your understanding. This learning path lays a solid foundation for anyone looking to excel in electrical engineering and circuit design.

Electric Power Technology

Learning Path

Courses

- DC Circuit Fundamentals | eLab Course
- DC Circuit Fundamentals | Evaluation
- AC Circuit Fundamentals | eLab Course
- AC Circuit Fundamentals | Evaluation

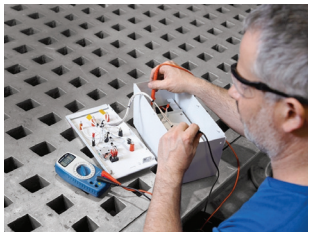
To the Learning Path

Electric Power Technology

Learning Path

Electromechanical Systems











Immerse yourself in the world of Electromechanical Systems with Festo's comprehensive course selection. Build a foundational understanding of DC Power Circuits with practical eLab courses and reinforce learning with evaluations. Advance to Single-Phase and Three-Phase AC Power Circuits, crucial for various industrial applications, again followed by evaluations to assess your grasp. Master the functionality of Single-Phase and Three-Phase Transformers through dedicated eLab courses and evaluate your expertise post-training. Dive into the workings of Permanent Magnet and Conventional DC Machines, as well as Universal Motors, to comprehend their roles in modern electromechanical systems. Learn about the efficiency in Three-Phase Rotating Machines and the importance of Power Factor Correction for Energy Management.

Electric Power Technology

Learning Path

Courses

- EPT Training Equipment – Classic | User Guide
- EPT Training Equipment– A4 Form | User Guide
- DC Power Circuits | eLab Course
- DC Power Circuits | Evaluation
- Single-Phase AC Power Circuits | eLab Course
- Single-Phase AC Power Circuits | Evaluation
- Three-Phase AC Power Circuits | eLab Course
- Three-Phase AC Power Circuits | Evaluation
- Single-Phase Power Transformer | eLab Course
- Single-Phase Power Transformer | Evaluation
- Three-Phase Transformer Banks | eLab Course
- Three-Phase Transformer Banks | Evaluation
- Permanent Magnet DC Machine | eLab Course
- Permanent Magnet DC Machines | Evaluation
- Three-Phase Rotating Machines | eLab Course
- Three-Phase Rotating Machines | Evaluation
- Power Factor Correction | eLab Course
- Power Factor Correction | Evaluation
- Conventional DC Machines and Universal Motor | eLab Course
- Conventional DC Machines and Universal Motor | Evaluation
- Single-Phase Induction Motors | eLab Course

To the Learning Path

Electric Power Technology

Learning Path

Power Electronics











Explore the dynamic field of Power Electronics with Festo's hands-on training. Start with eLab courses on DC, Single-Phase AC, and Three-Phase AC Power Electronics, gaining crucial skills in electrical systems management. Learn the control of power with Thyristor Power Electronics and delve into the mechanics of motor operations with DC and Three-Phase Motor Drives eLab courses. Tackle Hydropower Electricity Generation, solidifying your knowledge with an evaluation. Conclude with cutting-edge HVDC Transmission Systems, preparing you to power the future.

Electric Power Technology

Learning Path

Courses

- Electric Power Technology Training Equipment – Classic Format | eTheory Course
- Electric Power Technology Training Equipment – A4 Format | eTheory Course
- DC Power Electronics | eLab Course
- Single-Phase AC Power Electronics | eLab Course
- Three-Phase AC Power Electronics | eLab Course
- Thyristor Power Electronics | eLab Course
- DC Motor Drives | eLab Course
- Three-Phase Motor Drives | eLab Course
- Three-Phase Induction Motor Starters | eLab Course
- Hydropower Electricity Generation | eLab Course
- Hydropower Electricity Generation | Evaluation
- HVDC Transmission Systems | eLab Course

To the Learning Path

Electric Power Technology

Learning Path

Power Grid











Engage with AC Transmission Lines, then progress to safeguarding power systems through courses on protective relays, covering overcurrent, directional, differential, and distance protection methods. Grasp high-tech solutions like HVDC Transmission Systems, STATCOM, and SVC to maintain grid stability. Deepen your understanding of power distribution with Three-Phase Transformer Banks, punctuated with an evaluative test to assess your skills. Explore energy generation through Hydropower and Diesel Electricity Generation courses, each complemented by evaluations. Stay ahead of the curve with a course on Smart Grid technology and conclude with an introduction to Electric Power Substations. This path energizes your career with the expertise needed for today's power industry challenges.

Electric Power Technology

Learning Path

Courses

- EPT Training Equipment – Classic | User Guide
- EPT Training Equipment– A4 Form | User Guide
- AC Transmission Lines | eLab Course
- Overcurrent and Overload Protection Using Protect Relays | eLab Course
- Directional Protection | eLab Course
- Differential Protection | eLab Course
- Distance Protection | eLab Course
- HVDC Transmission Systems | eLab Course
- Static Synchronous Compensator Static Var Compensator (SVC) | eLab Course
- Three-Phase Transformer Banks | eLab Course
- Three-Phase Transformer Banks | Evaluation
- Hydropower Electricity Generation | eLab Course
- Hydropower Electricity Generation | Evaluation
- Diesel Electricity Generation | eLab Course
- Diesel Electricity Generation | Evaluation
- Smart Grid | eLab Course
- Introduction to Electric Power Substations | eLab Course

To the Learning Path

Electric Power Technology

Learning Path

Industrial Power System









Explore the fundamentals of industrial power systems with the Industrial Power System learning path. This comprehensive program covers essential concepts in three-phase AC power circuits, including wye and delta configurations, phase and line voltage calculations, and methods for measuring three-phase power. Delve into the principles of single-phase power transformers, focusing on key topics such as turns, voltage and current ratios, winding polarity, power losses, efficiency, voltage regulation, and operating frequency. Further your understanding with insights into three-phase transformer banks, examining their characteristics, winding connections, and common configuration types. By completing this learning path, you will gain the critical knowledge and skills necessary to effectively work with industrial power systems.

Electric Power Technology

Learning Path

Courses

- Three-Phase AC Power Circuits | eLab Course
- Three-Phase AC Power Circuits | Evaluation
- Single-Phase Power Transformer | eLab Course
- Single-Phase Power Transformer | Evaluation
- Three-Phase Transformer Banks | eLab Course
- Three-Phase Transformer Banks | Evaluation

To the Learning Path

Electric Power Technology

Learning Path

Basic Motor Controls





Gain essential knowledge in motor control with the Basic Motor Controls learning path. Explore fundamental topics such as control circuits, three-phase induction motors, motor protection, reversible motor starters, braking techniques, and reduced voltage starting methods. By engaging with this learning path, you will develop the critical skills necessary to effectively manage and control motor systems across various applications. Complete this path to enhance your expertise in motor control technology.

Electric Power Technology

Learning Path

Courses

- Basic Motor Control Technology | eLab Course
- Basic Motor Control Technology | Evaluation

To the Learning Path

Electric Power Technology

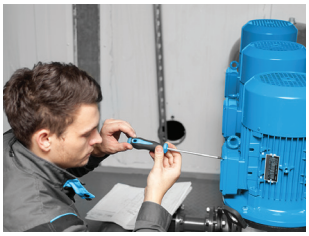
Learning Path

Electrical Machines











Explore the foundational concepts of electrical machines with the Electrical Machines learning path. Understand the basic principles of electric drives, including the construction and function of DC and AC motors, as well as their control mechanisms. Delve into the fundamental concepts of permanent magnet DC machines, along with various types of DC motors and generators. Gain insights into three-phase rotating machines, including squirrel-cage induction and synchronous machines, and learn about single-phase induction motors. By completing this learning path, you will acquire the essential knowledge and skills needed to excel in the field of electrical machines

Electric Power Technology

Learning Path

Courses

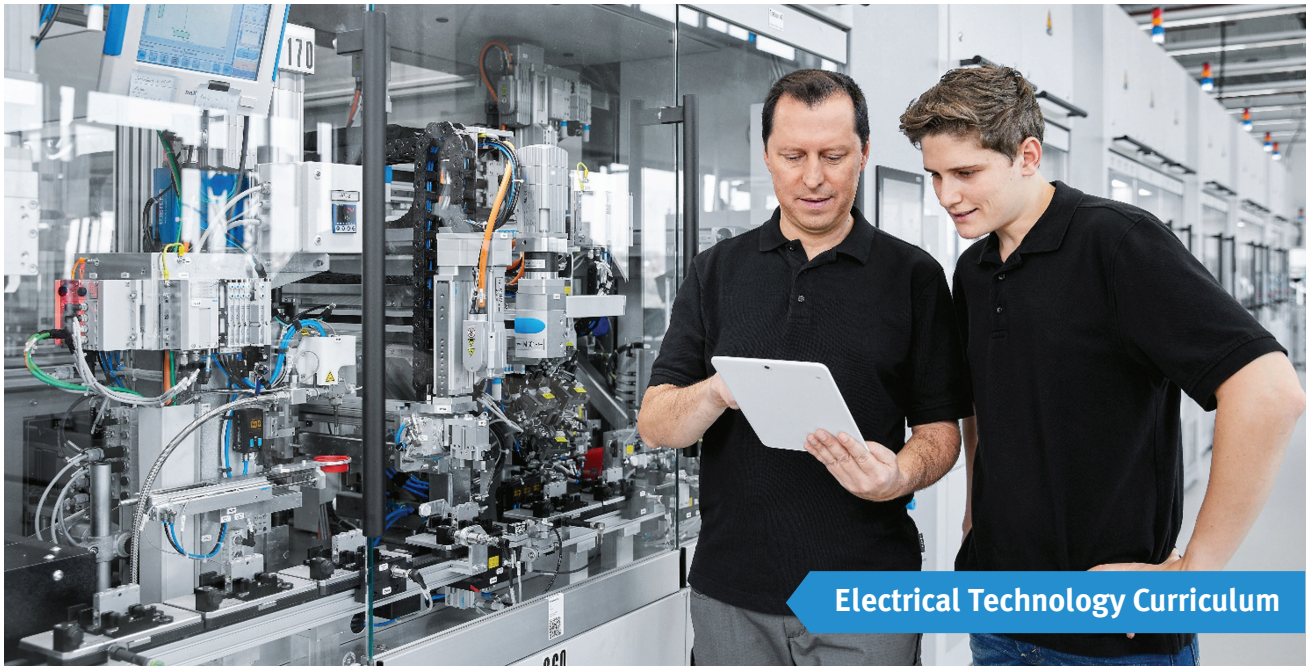
- Electric Drives 1 | eLearning Course
- Electric Drives 2 | eLearning Course
- Permanent Magnet DC Machine | eLab Course
- Permanent Magnet DC Machines | Evaluation
- Conventional DC Machines and Universal Motor | eLab Course
- Conventional DC Machines and Universal Motor | Evaluation
- Three-Phase Rotating Machines | eLab Course
- Three-Phase Rotating Machines | Evaluation
- Single-Phase Induction Motors | eLab Course
- Three-Phase Wound-Rotor Induction Machines | eLab Course

To the Learning Path

Electric Power Technology, Factory Automation, Industrial Trades, Process Automation

Learning Path

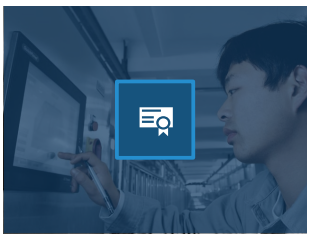
Smart Maintenance











Embark on the Smart Maintenance learning path to enhance your understanding of modern maintenance practices. Learn the importance of proactive maintenance strategies that stabilize plant performance and minimize downtime. Discover how technology and data analytics can improve overall equipment effectiveness and productivity. Explore various maintenance approaches, their benefits and drawbacks, and the optimal conditions for their application. Gain insights into innovative solutions that can transform traditional maintenance into smart maintenance. Complete this learning path to equip yourself with essential knowledge for effective maintenance in today's industrial landscape.

Electric Power Technology, Factory Automation, Industrial Trades, Process Automation

Learning Path

Courses

- TPM – Total Productive Maintenance | eLearning Course
- Total Productive Maintenance | Evaluation
- Smart Maintenance – Explained in 5 Minutes | eVideo
- From Maintenance to Smart Maintenance | eTheory Course
- From Maintenance to Smart Maintenance | Evaluation
- Digital Maintenance and Incident Management with Smartenance - Spotlight | eVideo

To the Learning Path

Electric Power Technology, Factory Automation

Learning Path

Stepper and Servo Motors





Explore the Stepper and Servo Motors learning path to gain a comprehensive understanding of motor control systems. This program covers the essential processes involved in the installation, wiring, and commissioning of stepper and servo motor control systems. In addition to the foundational knowledge, you will learn how to integrate these motor control systems within a PLC program, enhancing your ability to automate processes effectively. A hands-on project focused on programming a gantry application with two axes will provide practical experience, allowing you to apply your skills in a real-world context. Through practical applications and in-depth content, you will develop the expertise necessary to implement and manage stepper and servo motor technologies, as well as their integration into advanced automation solutions.

Electric Power Technology, Factory Automation

Learning Path

Courses

- Stepper and Servo Motor Control | eLab Course
- Stepper and Servo Motor Control | Evaluation

To the Learning Path

Electric Power Technology

Learning Path

Power Generation, Transmission and Distribution - Fundamentals of Power Systems











Embark on the Fundamentals of Power Systems learning path to gain a comprehensive understanding of various electricity generation methods and power system components. This program covers the basic concepts of diesel electricity generation, providing insights into its operation in micro grid applications. Explore hydropower electricity generation, learning about its principles and the role it plays in sustainable energy production. Delve into the characteristics of three-phase transformer banks, including their winding connections and common configuration types. Additionally, examine the behavior of high-voltage AC transmission lines, including voltage compensation techniques using switched shunt compensation (SSC). Finally, understand the operation of overcurrent and overload protective relays, which are crucial for ensuring system reliability and safety. By completing this learning path, you will acquire the essential knowledge and skills needed to excel in the field of power systems and contribute to effective energy management.

Electric Power Technology

Learning Path

Courses

- Hydropower Electricity Generation | eLab Course
- Diesel Electricity Generation | eLab Course
- Diesel Electricity Generation | Evaluation
- Hydropower Electricity Generation | Evaluation
- Three-Phase Transformer Banks | eLab Course
- Three-Phase Transformer Banks | Evaluation
- AC Transmission Lines | eLab Course
- Overcurrent and Overload Protection Using Protective Relays | eLab Course

To the Learning Path

Electric Power Technology

Learning Path

Smart Grid-Protection and Control Mechanisms







Explore the Protection and Control Mechanisms learning path to gain a thorough understanding of the principles and components essential for electric power substations. This program covers the operation, design, and switching schemes of electric power substations, providing a solid foundation in this critical area of power systems. Delve into the operation of differential protective relays, understanding how they function to protect electrical equipment from faults. Additionally, learn about directional protective relays and their role in enhancing system reliability and safety. By completing this learning path, you will acquire the essential knowledge and skills necessary to effectively implement and manage protection and control mechanisms within power systems, ensuring optimal performance and safety.

Electric Power Technology

Learning Path

Courses

- Introduction to Electric Power Substations | eLab Course
- Differential Protection | eLab Course
- Directional Protection | eLab Course

To the Learning Path

Electric Power Technology

Learning Path

Power Generation, Transmission and Distribution - Advanced Transmission and Distribution Systems











Explore the Advanced Transmission and Distribution Systems learning path to deepen your understanding of modern power system technologies. This program covers the essential concepts of voltage compensation in AC transmission lines and power factor correction in large industrial plants, focusing on the operation of static synchronous compensators (STATCOMs). Gain insights into the functionality of distance protective relays, which are critical for safeguarding transmission lines from faults. Learn about high-voltage direct current (HVDC) transmission systems, including their principles of operation and diverse applications in enhancing transmission efficiency and reliability. Additionally, the learning path delves into static var compensators (SVCs), emphasizing their role in voltage compensation and power factor correction. By completing this learning path, you will acquire the knowledge and skills necessary to effectively implement and manage advanced transmission and distribution technologies within power systems."

Electric Power Technology

Learning Path

Courses

- Static Synchronous Compensator (STATCOM) | eLab Course
- Distance Protection | eLab Course
- HVDC Transmission Systems | eLab Course
- Static Var Compensator (SVC) | eLab Course

To the Learning Path

Electric Power Technology

Learning Path

Power Factor Correction







Dive into the Power Factor Correction learning path to gain a comprehensive understanding of power factor correction techniques in various applications. This program covers the essential concepts of power factor correction, focusing on both electrical substations and large industrial settings. Learn about the installation, commissioning, operation, and programming of automatic power factor correction (APFC) systems, which are vital for optimizing energy efficiency and reducing utility costs. Through practical applications and in-depth content, you will develop the skills necessary to implement effective power factor correction strategies. By completing this learning path, you will be equipped with the knowledge and expertise needed to enhance power system performance and contribute to energy management solutions.

Electric Power Technology

Learning Path

Courses

- Power Factor Correction | eLab Course
- Power Factor Correction | Evaluation
- Automatic Power Factor Correction Systems | eLab Course
- Automatic Power Factor Correction Systems | Evaluation

To the Learning Path



Electric Power Technology

Learning Path

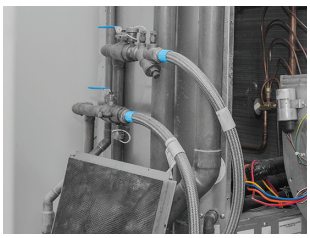
Electrical Machines - EU











Explore the Electrical Machines - EU learning path to gain a thorough understanding of electric drives and machines. This program begins with an eLearning course on the basic principles of electric drives, covering the construction and function of DC and AC motors. It further expands on these principles, including the controlling of motors, energy efficiency, and economic and environmental aspects. Delve into the fundamentals of DC and AC machines through practical applications, gaining hands-on experience and understanding of their operation. Additionally, learn the basic concepts of motors and generators, focusing on three-phase rotating machines such as three-phase squirrel-cage induction machines and three-phase synchronous machines. By completing this learning path, you will develop the knowledge and skills necessary to work effectively with various types of electrical machines, enhancing your expertise in the field of electric drives and motors.

Electric Power Technology

Learning Path

Courses

- Electric Drives 1 | eLearning Course
- Electric Drives 2 | eLearning Course
- Fundamentals of DC Machines | eLab Course
- Fundamentals of AC Machines | eLab Course
- Three-Phase Rotating Machines | eLab Course
- Fundamentals of Three-Phase Current Machines | eLab Course

To the Learning Path

Electric Power Technology, Factory Automation, Process Automation

Learning Path

Electrical and Industrial Safety





Embark on the Electrical and Industrial Safety learning path to gain essential knowledge and skills for ensuring safety in industrial environments. This program covers the fundamental principles of safety, including hazard identification, risk assessment, and the implementation of safety protocols. Learn about key practices to protect workers and equipment, promoting a culture of safety in the workplace. By completing this learning path, you will be equipped with the knowledge and expertise necessary to create a safer industrial environment, reduce the risk of accidents, and enhance overall safety performance.

Electric Power Technology, Factory Automation, Process Automation

Learning Path

Courses

- Industrial Safety in the Workplace | eTheory Course
- Industrial Safety in the Workplace | Evaluation

To the Learning Path

Electric Power Technology

Learning Path

Frequency Converters - EU





Dive into the Frequency Converters - EU learning path to gain a comprehensive understanding of speed control for three-phase asynchronous motors using frequency converters. This program includes an eTheory course that covers the fundamental principles of speed control, providing a solid theoretical foundation. Complement your learning with a practical eLab course that reinforces the concepts covered in the theory, allowing you to apply your knowledge in real-world scenarios. By completing this learning path, you will acquire the skills necessary to effectively control the speed of three-phase asynchronous motors, enhancing your expertise in motor control technologies.

Electric Power Technology

Learning Path

Courses

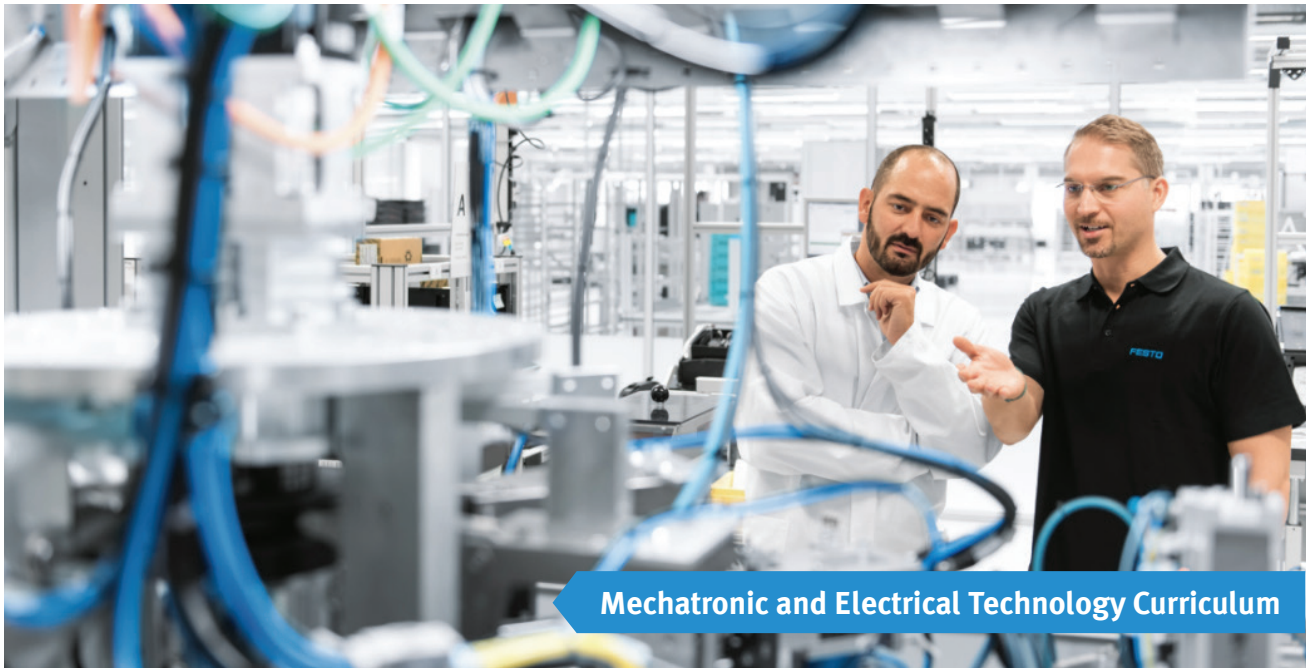
- Speed Control of Three-Phase Asynchronous Motors with Frequency Converters | eTheory Course
- Speed Control of Three-Phase Asynchronous Motors with Frequency Converters | eLab Course

To the Learning Path

Fluid Power

Learning Path

Pneumatics and Electropneumatics











Unlock the mysteries of fluid power in modern automation as you delve from foundational principles to essential components like actuators and valves. Our eLearning courses provide a comprehensive understanding of this technology. Once you've mastered the theory, immerse yourself in practical application with our state-of-the-art eLab courses, where you'll witness pneumatics in action. But that's just the beginning – your journey doesn't stop there. We also explore the intricacies of electropneumatics with the same thoroughness. This journey is your gateway to unlocking new opportunities and proving your expertise in this dynamic field.

Fluid Power

Learning Path

Courses

- Pneumatic Fundamentals | eLearning Course
- Pneumatic Air Treatment | eLearning Course
- Pneumatic Actuators | eLearning Course
- Pneumatic Valves | eLearning Course
- Basic Pneumatic Circuits | eLearning Course
- Basics of Pneumatics | eLab Course
- Basics of Pneumatics | Evaluation
- Electropneumatic Fundamentals | eLearning Course
- Electropneumatic Components | eLearning Course
- Basic Electropneumatic Circuits | eLearning Course
- Basics of Electropneumatics | eLab Course
- Basics of Electropneumatics | Evaluation

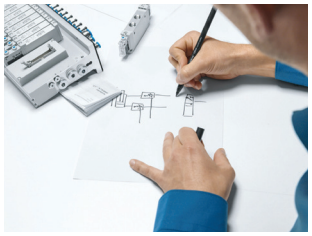
To the Learning Path

Fluid Power

Learning Path

Pneumatics and Electropneumatics – Americas











Explore the realm of fluid power in modern automation, from foundational principles to essential components like actuators and valves. Our eLearning courses provide a robust understanding of the technology. Immerse yourself in practical exercises tailored to the Americas region through cutting-edge eLab courses, gaining firsthand experience with pneumatics. Conclude your journey with an assessment to showcase your comprehension. Extend your skills to electropneumatics, unlocking fresh opportunities for growth and expertise in the Americas.

Fluid Power

Learning Path

Courses

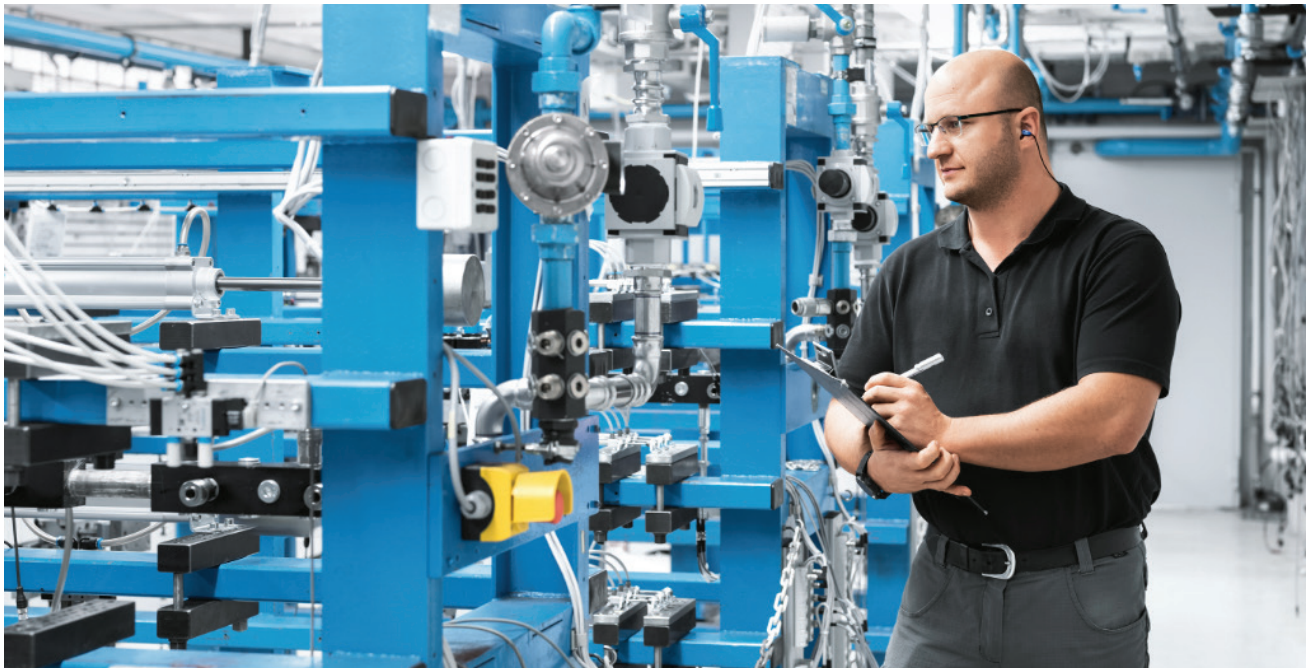
- Pneumatic Fundamentals | eLearning course
- Pneumatic Air Treatment | eLearning course
- Pneumatic Actuators | eLearning course
- Pneumatic Valves | eLearning course
- Basic Pneumatic Circuits | eLearning course
- Pneumatics Basic Level – TP America | eLab course
- Pneumatics Basic Level – TP America | Evaluation
- Electropneumatic Fundamentals | eLearning course
- Electropneumatic Components | eLearning course
- Basic Electropneumatic Circuits | eLearning course
- Electropneumatics Basic level – TP America | eLab course
- Electropneumatics Basic level – TP 201 America | Evaluation

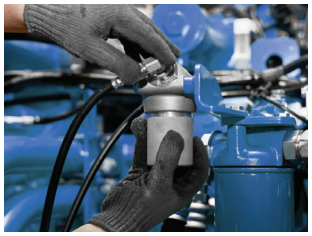
To the Learning Path

Fluid Power

Learning Path

Hydraulics and Electrohydraulics











Unearth the secrets of fluid power in contemporary automation, spanning from fundamental principles to essential components like actuators and valves. Our eLearning resources equip you with a robust understanding of the technology. Engage in practical exercises through immersive eLab courses, immersing yourself in the world of hydraulics. Conclude your journey with an evaluative assessment to validate your proficiency. Dive deeper into electrohydraulics to broaden your expertise and capitalize on new opportunities.

Fluid Power

Learning Path

Courses

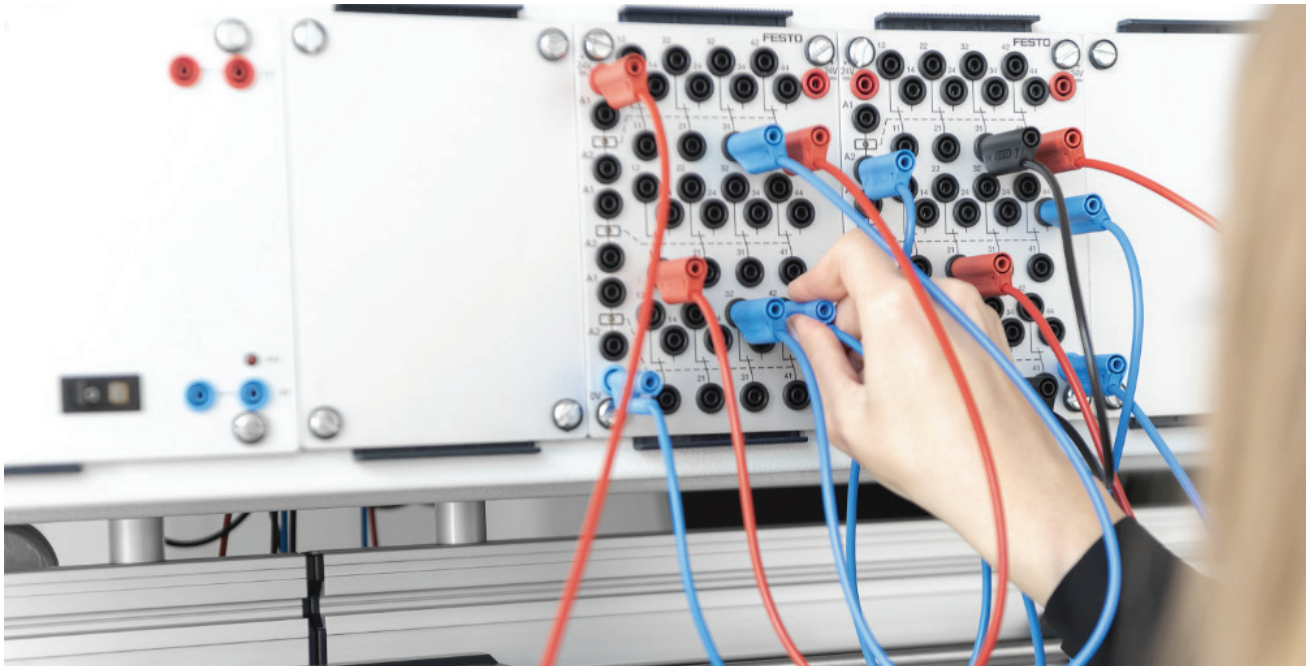
- Hydraulic Fundamentals | eLearning Course
- Hydraulic Power Pack | eLearning Course
- Hydraulic Actuators | eLearning Course
- Hydraulic Valves | eLearning Course
- Basic Hydraulic Circuits | eLearning Course
- Basics of Hydraulics | eLab Course
- Basics of Hydraulics | Evaluation
- Electrohydraulic Fundamentals | eLearning Course
- Electrohydraulic Components | eLearning Course
- Basic Electrohydraulic Circuits | eLearning Course
- Basics of Electrohydraulics | eLab Course
- Basics of Electrohydraulics | Evaluation
- Digitalization in Hydraulics | eLab Course

To the Learning Path

Fluid Power

Learning Path

Hydraulics and Electrohydraulics – America











Take a journey into the realm of fluid power in modern automation, traversing from foundational principles to essential components like actuators and valves. Our eLearning courses provide a robust understanding of the technology. Immerse yourself in practical exercises with cutting-edge eLab courses, focusing on the Americas region, to gain firsthand experience with hydraulics. Conclude your exploration with an assessment to validate your comprehension. Expand your knowledge to electrohydraulics, tailoring your expertise to meet the unique demands of the field for enhanced growth opportunities.

Fluid Power

Learning Path

Courses

- Hydraulic Fundamentals | eLearning Course
- Hydraulic Power Pack | eLearning Course
- Hydraulic Actuators | eLearning Course
- Hydraulic Valves | eLearning Course
- Basic Hydraulic Circuits | eLearning Course
- Hydraulics Basic Level – TP America | eLab Course
- Hydraulics Basic Level – TP America | Evaluation
- Electrohydraulic Fundamentals | eLearning Course
- Electrohydraulic Components | eLearning Course
- Basic Electrohydraulic Circuits | eLearning Course
- Electrohydraulics Basic Level – TP America | eLab Course
- Electrohydraulics Basic Level – TP America | Evaluation
- Digitalization in Hydraulics | eLab Course

To the Learning Path

Fluid Power

Learning Path

Pneumatic Fundamentals











Fundamentals of pneumatics and control technology, focusing on the structure and function of single- and double-acting cylinders, pressure measurement, and the design and analysis of pneumatic circuit diagrams (including GRAFCET). Covers valve functionality, logical operations (AND, NOT), safety-related functions, and the use of sensors and actuators in pneumatic systems.

Fluid Power

Learning Path

Courses

- Pneumatic Fundamentals | eLearning Course
- Pneumatic Air Treatment | eLearning Course
- Pneumatic Actuators | eLearning Course
- Pneumatic Valves | eLearning Course
- Basic Pneumatic Circuits | eLearning Course
- Basics of Pneumatics | eLearning Course
- Basics of Pneumatics | Evaluation

To the Learning Path

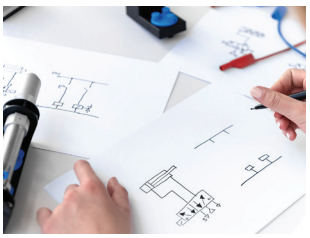
Fluid Power

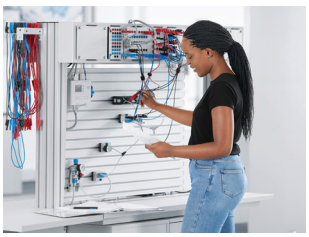
Learning Path

Electropneumatic Fundamentals











Basic training in electropneumatic control technology is the focus of the equipment set Electropneumatics, Basic level. Knowledge of the function and use of pneumatic and electrical components is taught. The focus is on solenoid valves, electronic proximity switches and relay controls. The material is optimally coordinated with the training media, which provide illustrative project tasks.

Fluid Power

Learning Path

Courses

- Electropneumatic Fundamentals | eLearning Course
- Electropneumatic Components | eLearning Course
- Basic Electropneumatic Circuits | eLearning Course
- Basics of Electropneumatics | eLab Course
- Basics of Electropneumatics | Evaluation

To the Learning Path

MetalWorking

Learning Path

MetalWorking and Additive Manufacturing











Step into a dynamic learning journey in the manufacturing industry. Our immersive program offers a blend of theory and practice, covering metalworking, machining techniques, component design, additive manufacturing and commissioning. Master the skills of Drilling, Turning, Milling and more with the interactive SkillsMagazine Kit project. Explore countersinking, reaming, routing, knurling, thread cutting, filing and bending to improve your skills. Look more deeply into the component design process and experience the innovative potential of 3D printing technology. Join this journey, where you will unlock your creativity and release your full manufacturing potential.

MetalWorking

Learning Path

Courses

- Introduction to the SkillsMagazine Kit Project
  | Learning Video
- Manufacturing Processes at a Glance
  | eLearning Course
- Files - How Tool
  | Learning Video
- Filing as Manufacturing Process - How Tool
  | Learning Video
- Knife Edge Square - How Tool
  | Learning Video
- Scribing - How Tool
  | Learning Video
- Center Punching - How Tool
  | Learning Video
- Drill - How Tool
  | Learning Video
- Deburring a Drill Hole - How Tool
  | Learning Video
- Cutting internal Threads - How Tool
  | Learning Video
- Cutting external Threads - How Tool
  | Learning Video
- Metal Working: Drilling
  | eLearning Course
- Basics of Drilling and Forming (SkillsMagazine Kit)
  | eLab Course
- Basics of Drilling and Forming
  | Evaluation
- Metal Working: Turning
  | eLearning Course
- Basics of Turning (SkillsMagazine Kit)
  | eLab Course
- Basics of Turning
  | Evaluation
- Metal Working: Milling
  | eLearning Course
- Basics of Milling (SkillsMagazine Kit)
  | eLab Course
- Basics of Milling
  | Evaluation
- Additive Manufacturing Processes - Explained in 5 Min.
  | Learning Video
- Introduction to Additive Manufacturing
  | eTheory Course
- Additive Manufacturing (SkillsMagazine Kit)
  | eLab Course
- Additive Manufacturing
  | Evaluation
- Commissioning of the Stacking Magazine (SkillsMagazine Kit)
  | eLab Course

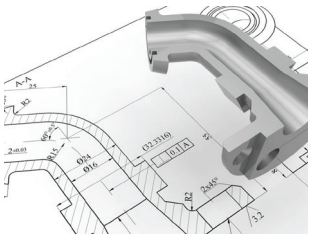
To the Learning Path

MetalWorking

Learning Path

Technical Documentation







The technical documentation learning path teaches the basics and standardization of technical drawings. Participants learn how to derive two-dimensional views from 3D models and gain insights into standard-compliant dimensioning and the representation of welded and soldered seams. The principles of limit dimensions, tolerances and fits are also covered. Another focus is on production-oriented representation and dimensioning in order to create suitable documentation.

MetalWorking

Learning Path

Courses

- Introduction to Technical Documentation | eTheory Course
- Basics of Technical Documentation | eLab Course
- Basics of Technical Documentation | Evaluation

To the Learning Path

MetalWorking

Learning Path

Drilling







The learning path drilling cover fundamental manufacturing skills. First, safety regulations must be followed, and technical drawings need to be interpreted correctly. Essential tools like drills, countersinks, and reamers must be used safely, along with various measuring instruments. Understanding the structure and operation of drilling machines is also required, as well as creating a work plan. Additional skills include scribing and center-punching components, as well as knowledge of fits and tolerances. Handling bending devices and calculating the unfolded length of bent parts are also necessary. All steps must be documented and reflected upon to ensure quality and precision in manufacturing.

MetalWorking

Learning Path

Courses

- Metal Working: Drilling | eLearning Course
- Basics of Drilling and Forming (SkillsMagazine Kit) | eLab Course
- Grundlagen des Bohrens und Umformens | Evaluation

To the Learning Path

MetalWorking

Learning Path

Metrology





The learning path for precision measurement includes various instruments such as vernier and digital calipers and micrometers. The vernier scale enables precise readings between main markings. Digital calipers provide simpler readings, while micrometers are used for outside diameters. The three-wire method is used to accurately determine the pitch circle diameter of threads. Small-hole and telescopic gauges are used for internal measurements. Knowledge of tolerances and fits in accordance with ISO 286 is also important to ensure the conformity of workpieces.

MetalWorking

Learning Path

Courses

- Dimensional Metrology – Precision Measurement | eLab Course
- Dimensional Metrology – Precision Measurement | Evaluation

To the Learning Path

MetalWorking

Learning Path

Turning







The turning learning path includes the production of supports, threaded rods, turning exercises, sleeves and stepped shafts and imparts important knowledge of safety regulations, the design of lathes and various clamping devices. Participants learn to differentiate between turning techniques such as longitudinal and transverse facing and to interpret technical drawings. They will also learn about taper production and testing, the use of measuring tools such as micrometers and quality inspections. The creation of work plans and the documentation of results are also key topics for assessing the economic efficiency and assembly costs of production processes.

MetalWorking

Learning Path

Courses

- Metal Working: Turning | eLearning Course
- Basics of Turning (SkillsMagazine Kit) | eLab Course
- Basics of Turning | Evaluation

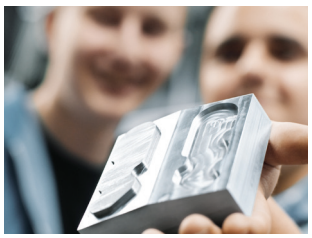
To the Learning Path

MetalWorking

Learning Path

Milling









The manufacturing learning path focuses on essential safety regulations and the operation of milling machines. Participants gain skills in selecting appropriate tool holders, securely clamping and aligning workpieces, and interpreting technical drawings. They learn various machining techniques, including threading and beveling, while conducting quality inspections. Additionally, the program emphasizes the creation and presentation of work plans, along with assessing costs and identifying optimization opportunities. This holistic approach aims to improve efficiency and ensure adherence to safety and quality standards in production processes.

MetalWorking

Learning Path

Courses

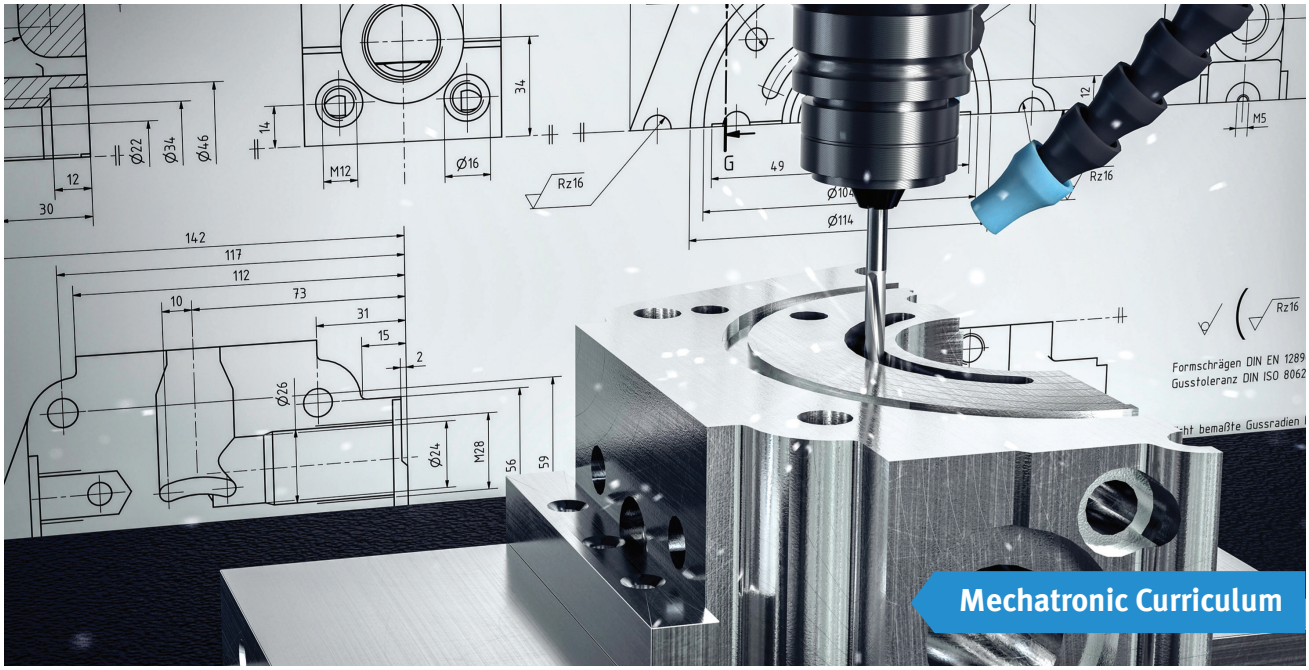
- Metal Working: Milling | eLearning Course
- Basics of Milling (SkillsMagazine Kit) | eLab Course
- Grundlagen des Fräsens | Evaluation

To the Learning Path

MetalWorking

Learning Path

CNC Manufacturing





The Additive Manufacturing learning pathway covers the design and manufacture of components and includes the reading and interpretation of technical drawings and the schematic analysis of components. Students will learn to develop strategic plans for component designs and apply various CAD modeling strategies. Additive manufacturing processes are used in production and the quality of the components is checked. In addition, participants create standard-compliant technical drawings, fill in drawing headers and identify possible errors in order to critically reflect on the designs.

MetalWorking

Learning Path

Courses

- Introduction to CNC Technology | eTheory Course
- Basics of CNC Technology | Evaluation

To the Learning Path

Industrial Trades

Learning Path

ISO Geometric Product Specification











Join a transformative journey into precision engineering with our Geometric Product Specification to ISO program. Deepen your understanding of ISO standards such as 14405 and 1101 and develop your skills in dimensional and form tolerance. Learn important concepts such as datum systems, material conditions and measurement uncertainties. Dive into surface texture specification and advanced measurement techniques. Our comprehensive curriculum, developed by industry leaders Festo Didactic SE and Mahr GmbH, is designed for both experienced professionals and newcomers. Acquire the skills you need to navigate the world of product specification with certainty and precision.

Industrial Trades

Learning Path

Courses

- Fundamentals of ISO Geometrical Product Specifications | eLearning Course
- Dimensional Tolerancing According to ISO 14405 | eLearning Course
- Form Tolerances According to ISO 1101 | eLearning Course
- Datums, Orientation, Location and Run-out | eLearning Course
- Material Conditions According to ISO 2692 | eLearning Course
- Standards for Zones, Edges and Measurement Uncertainties | eLearning Course
- ISO Geometrical Product Specification | Size, Form and Location | Evaluation
- Fundamentals of Surface Texture | eLearning Course
- Indication of Surface Texture | eLearning Course
- Measurement Strategies of Surface Texture | eLearning Course
- ISO Geometrical Product Specification | Surfaces | Evaluation

To the Learning Path

Industrial Trades

Learning Path

Industrial Pumps











Navigate the flow of Industrial Pumps with Festo's comprehensive learning suite. Begin with the eLab courses on Single-Pump Systems, applying your knowledge in practical scenarios, followed by evaluations to solidify your learning. Analyze Pump Performance, understanding the variables that affect pump operations. Scale up to Multiple-Pump Systems, learning the intricacies of parallel and series pump operations. Conclude with External Gear Pumps, delving into their mechanics and applications. This pathway primes you for expertise in pump technology, a crucial element in industrial operations.

Industrial Trades

Learning Path

Courses

- Industrial Pump Learning System | User Guide
- Single-Pump Systems | eLab Course
- Single-Pump Systems | Evaluation
- Pump Performance | eLab Course
- Pump Performance | Evaluation
- Multiple-Pump Systems | eLab Course
- Multiple-Pump Systems | Evaluation
- External Gear Pumps | eLab Course
- External Gear Pumps | Evaluation

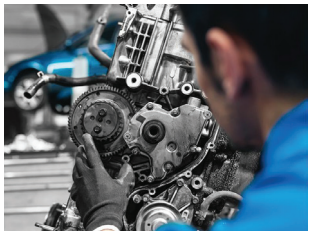
To the Learning Path

Industrial Trades

Learning Path

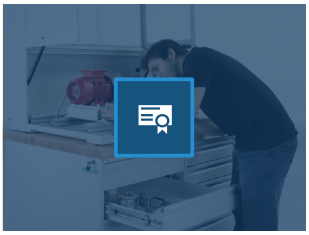
Mechanical Drives











Gear up for mastery in Mechanical Drives with Festo's tailored courses. Start with the eLab courses from the basics of drive systems to advanced vibration analysis. Practical evaluations follow each module, cementing your knowledge. Explore belt, chain, and gear drives, the keystones of machinery. Delve into bearings, seals, and couplings, crucial for machine longevity. Progress to ball screws and linear bearings for precision motion control. Learn to maintain system health with clutch, brake, and vibration analysis skills. Power your career with hands-on expertise in mechanical systems.

Industrial Trades

Learning Path

Courses

- Mechanical Drives Training System | User Guide
- Introduction to Mechanical Drives | eLabCourse
- Introduction to Mechanical Drives | Evaluation
- Belt Drives 1 | eLab Course
- Belt Drives 1 | Evaluation
- Chain Drives 1 | eLab Course
- Chain Drives 1 | Evaluation
- Gear Drives 1 | eLab Course
- Gear Drives 1 | Evaluation
- Belt Drives 2 | eLab Course
- Belt Drives 2 | Evaluation
- Chain Drives 2 | eLab Course
- Chain Drives 2 | Evaluation
- Gear Drives 2 | eLab Course
- Gear Drives 2 | Evaluation
- Bearings and Seals | eLab Course
- Bearings and Seals | Evaluation
- Shaft Alignment and Couplings | eLab Course
- Shaft Alignment and Couplings | Evaluation
- Ball Screws and Linear Bearings | eLab Course
- Ball Screws and Linear Bearings | Evaluation
- Clutches and Brakes | eLab Course
- Clutches and Brakes | Evaluation
- Vibration Metering | eLab Course
- Vibration Metering | Evaluation
- Vibration Analysis | eLab Course
- Vibration Analysis | Evaluation

To the Learning Path

Industrial Trades

Learning Path

Measurement Technology and Quality Assurance











Step into the precise world of Measurement Technology and Quality Assurance with Festo. Begin with Dimensional Metrology eLab courses, sharpening your semi-precision and precision measurement skills, then test your acumen with thorough evaluations. Master advanced measurement techniques to ensure you meet stringent quality standards. Grasp the essentials of Statistical Process Control through interactive eLabs, understanding the data behind quality. Complement your learning with How Tool Videos on tools like Vernier Calipers and Tape Measures, vital for any quality professional. This learning path is your gateway to excellence in the meticulous field of Metrology and Quality Control.

Industrial Trades

Learning Path

Courses

- Dimensional Metrology – Semi-Precision Measurement | eLab Course
- Dimensional Metrology – Semi-Precision Measurement | Evaluation
- Dimensional Metrology – Precision Measurement | eLab Course
- Dimensional Metrology – Precision Measurement | Evaluation
- Dimensional Metrology – Advanced Measurement | eLab Course
- Dimensional Metrology – Advanced Measurement | Evaluation
- Statistical Process Control | eLab Course
- Statistical Process Control | Evaluation
- Vernier Caliper (Inch Dimensions) - How Tool | Learning Video
- Vernier Caliper (Metric) - How Tool | Learning Video
- Tape Measure - How Tool | Learning Video
- Knife Edge Square - How Tool | Learning Video

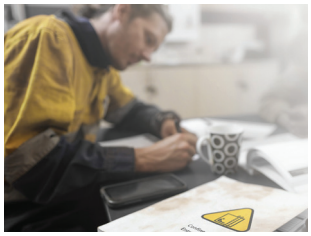
To the Learning Path

Industrial Trades

Learning Path

Machine Safety











Enhance your workplace safety with our Machine Safety learning path. This series of eLearning modules is crafted to provide you with essential skills and knowledge for a safer work environment. You will begin by learning the fundamentals of workplace safety, including compliance and legal aspects. Next, you'll master techniques for identifying and reducing risks in line with international standards. The program also covers key safety functions designed to prevent accidents and equipment damage. Additionally, you'll focus on evaluating technical protective measures to reduce risks and prevent failures in automation systems. Finally, gain valuable insights into safety sub-functions crucial for managing hazardous situations in automation systems. By completing this learning path, you can effectively identify, evaluate, and mitigate risks, implement essential safety functions, and ensure compliance, all contributing to a safer and more secure work environment.

Industrial Trades

Learning Path

Courses

- Machine Safety Awareness | eLearning Course
- Risk Assessment According to ISO 12100 | eLearning Course
- General Safety Functions | eLearning Course
- Evaluation of Technical Protective Measurements | eLearning Course
- Safety Sub-Functions in Pneumatic and Electric Automation | eLearning Course
- Machine Safety | Evaluation

To the Learning Path

Industrial Trades

Learning Path

Industrial Wiring











Dive into the essential skills of electrical systems with the Industrial Wiring learning path. Enhance your practical knowledge through instructional videos that cover the proper use of various tools critical for wiring tasks, including screwdrivers, tape measures, insulation-stripping pliers, crimping tools, and drills. Advance your learning by exploring comprehensive training on the assembly, installation, startup, maintenance, and troubleshooting of electrical wiring systems in industrial applications. By completing this learning path, you will acquire the crucial skills and knowledge necessary to excel in the field of industrial wiring.

Industrial Trades

Learning Path

Courses

- Screwdriver - How Tool | eVideo
- Tape Measure - How Tool | eVideo
- Cordless Drill - How Tool | eVideo
- Deburring a Drill Hole - How Tool | eVideo
- Insulation-Stripping Plier - How Tool | eVideo
- Crimping Tool - How Tool | eVideo
- Industrial Wiring | eLab Course
- Industrial Wiring | Evaluation

To the Learning Path

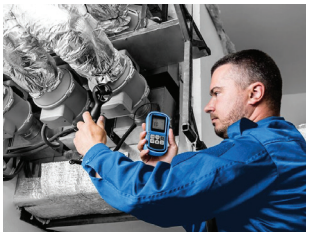
Process Automation

Learning Path

Pressure, Flow, and Level











Embark on a comprehensive learning journey through the concepts of Pressure, Flow, and Level with Festo's tailored courses. Start with an overview in Process Automation through an eLearning course, then delve deeper into Open and Closed Loop Control with another eLearning module. Measure your progress with an eLab course on Measurement, where you'll understand the critical parameters of pressure, flow, and level, and reinforce this with a practical evaluation. Advance to Process Control eLabs, where you'll fine-tune these parameters within complex systems. The path culminates with Advanced Process Control, challenging you to apply your skills in more sophisticated scenarios, capped by an evaluation to confirm your expertise.

Process Automation

Learning Path

Courses

- Process Automation | eLearning Course
- Open and Closed Loop Control | eLearning Course
- Familiarization with the Training System – Pressure, Flow, and Level | User Guide
- Measurement – Pressure, Flow, and Level | eLab Course
- Measurement – Pressure, Flow, and Level | Evaluation
- Process Control – Pressure, Flow, and Level | eLab Course
- Advanced Process Control | eLab Course
- Advanced Process Control | Evaluation

To the Learning Path



Process Automation

Learning Path

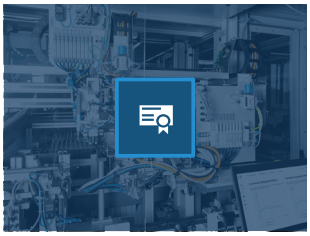
Temperature











Dive into the essence of thermal management with Festo's Temperature learning suite. Kickstart your journey with the Process Automation eLearning course to grasp fundamental concepts. Progress with the Open and Closed Loop Control course for a deeper understanding of system regulation. In the Measurement eLab course, delve into temperature variables and validate your skillset with an evaluation. Culminate with the Process Control eLab, mastering temperature regulation in diverse industrial scenarios. This pathway is your thermostat for success in thermal processes.

Process Automation

Learning Path

Courses

- Process Automation | eLearning Course
- Open and Closed Loop Control | eLearning Course
- Familiarization with the Training System – Pressure, Flow, and Level | User Guide
- Measurement – Temperature | eLab Course
- Measurement – Temperature | Evaluation
- Process Control – Temperature | eLab Course

To the Learning Path

Process Automation

Learning Path

Three-Phase Separator







Step into the crucial world of upstream oil refinement with Festo's Three-Phase Separator curriculum. Initiate your training with the eLab course on Basic Control, gaining practical skills in managing separator operations, followed by an evaluation to solidify your understanding. Heighten your expertise with the Instrumentation eLab course, learning the vital role of accurate measurements in efficient separation. Each step, paired with rigorous evaluations, preps you for the demanding environment of upstream oil refinement, ensuring you emerge as a skilled professional in three-phase separation.

Process Automation

Learning Path

Courses

- Three-Phase Separator Learning System | User Guide
- Three-Phase Separator – Basic Control | eLab Course
- Three-Phase Separator – Basic Control | Evaluation
- Three-Phase Separator – Instrumentation | eLab Course
- Three-Phase Separator – Instrumentation | Evaluation

To the Learning Path

Process Automation

Learning Path

Water Management











Explore the field of “Water Management” as part of our specialized program that equips you with fundamental knowledge and skills. In our introductory course, you will first learn about the dynamics of the water cycle and its management. Learn key water purification techniques to ensure access to clean and safe water. Delve into topics such as water supply, wastewater transportation and treatment processes. Delve into advanced methods such as sand filtration and membrane filtration. Explore mechanical pre-treatment methods for wastewater and the importance of adsorption in water management. The program provides a comprehensive understanding of water management practices that are essential to effectively address global water challenges.

Process Automation

Learning Path

Courses

- Introduction to Water Cycle and Water Management | eLearning Course
- Water Purification | eLearning Course
- Water Supply | eLearning Course
- Wastewater Transport | eLearning Course
- Wastewater Treatment | eLearning Course
- Sand Filtration for Water Purification | eLearning Course
- Membrane Filter Process in Water Management | eLearning Course
- Mechanical Pre-Treatment for Wastewater | eLearning Course
- Adsorption in Water Management | eLearning Course

To the Learning Path

Process Automation

Learning Path

Fundamentals of Process Automation





Discover the Fundamentals of Process Automation - NAM learning path to gain essential knowledge in process automation. This program begins with an eLearning course that covers the basics of process automation, including substance handling, system planning, and practical engineering processes. Explore the differences between open and closed-loop control systems through practical examples in another eLearning course. This course addresses various types of control, signal processing, and regulators, providing a solid foundation in automation techniques. Additionally, delve into the fundamentals of closed-loop control in a dedicated eLab course, where you will learn key concepts and applications. By completing this learning path, you will develop the skills necessary to effectively implement and manage process automation systems in various industrial settings.

Process Automation

Learning Path

Courses

- Process Automation | eLearning Course
- Fundamentals of Closed-Loop Control | eLab Course

To the Learning Path

Renewable Energy

Learning Path

Renewable Energies











Embark on a green tech voyage with Festo's Renewable Energies curriculum. Begin with an eLearning course on Sustainability to understand the global impact and significance. Test the waters with DC Power Circuits eLab courses, followed by an evaluation to solidify your expertise. Delve into energy storage with the Lead-Acid Batteries course and broaden your skill set with another eLearning course on Renewable Energies. Harness the power of the sun with the Solar Power eLab and validate your knowledge with an evaluation. Get a whirlwind tour of Wind Power essentials, and continue your journey through Single-Phase AC Power Circuits, with both practical eLab experiences and evaluations. Dive deeper into transformer applications with eLab courses on Single-Phase and High-Frequency Power Transformers.

Renewable Energy

Learning Path

Courses

- Sustainability – What Is It About? | eLearning Course
- EPT Training Equipment – Classic | User Guide
- EPT Training Equipment– A4 Form | User Guide
- DC Power Circuits | eLab Course
- DC Power Circuits | Evaluation
- Lead-Acid Batteries | eLab Course
- Renewable Energies | eLearning Course
- Solar Power | eLab Course
- Solar Power | Evaluation
- Introduction to Wind Power | eLab Course
- Single-Phase AC Power Circuits | eLab Course
- Single-Phase AC Power Circuits | Evaluation
- Single-Phase Power Transformer | eLab Course
- Single-Phase Power Transformer | Evaluation
- DC Power Electronics | eLab Course
- Single-Phase AC Power Electronics | eLab Course
- High-Frequency Power Transformers | eLab Course

To the Learning Path

Renewable Energy

Learning Path

Solar and Wind Power











Chart a sustainable course with Festo's Solar and Wind Power training. Ignite your journey with an eLearning course on Sustainability to grasp the environmental imperatives. Deepen your understanding with another eLearning module on Renewable Energies, setting the stage for specialized knowledge. Immerse yourself in Photovoltaic Systems and Solar Power through practical eLab courses, complemented by evaluations to benchmark your progress. Then, ascend to Wind Power Systems, capturing the principles and practices of harnessing the wind's energy. An Introduction to Wind Power further consolidates your knowledge, preparing you to be an active participant in the transition to a cleaner, greener future. This learning path is a beacon for those aiming to specialize in the renewable energy sector.

Renewable Energy

Learning Path

Courses

- Sustainability – What Is It All About? | eLearning Course
- Renewable Energies | eLearning Course
- Electric Power Technology Training Equipment – A4 Format | User Guide
- Photovoltaic Systems | eLab Course
- Solar Power | eLab Course
- Solar Power | Evaluation
- Wind Power Systems | eLab Course
- Introduction to Wind Power | eLab Course

To the Learning Path

Renewable Energy

Learning Path

Wind Power Generation











Dive into the realm of Wind Power Generation with Festo's focused curriculum. Kickstart your adventure with an eLearning course on Sustainability to understand the crucial role wind power plays in our sustainable future. Follow this with the Renewable Energies course, broadening your perspective on green technologies. Proceed to hands-on mastery with the Nacelle – Operation and Maintenance eLab course, evaluating your skills to ensure proficiency. Explore the integration of wind power into the grid with the Grid-Tied Nacelle eLab course. Then, delve into the nuances of turbine control with both Electrical and Hydraulic Pitch Hub courses, understanding the mechanisms that optimize efficiency and safety. This learning path equips you with the expertise to contribute to the wind power sector, from maintenance to advanced system operations.

Renewable Energy

Learning Path

Courses

- Sustainability – What Is It All About? | eLearning Course
- Renewable Energies | eLearning Course
- Nacelle – Wind Turbine Learning System | User Guide
- Nacelle – Operation and Maintenance | eLab Course
- Nacelle – Operation and Maintenance | Evaluation
- Grid-Tied Nacelle | eLab Course
- Electrical Pitch Hub | eLab Course
- Hydraulic Pitch Hub | eLab Course

To the Learning Path

Renewable Energy

Learning Path

Solar and Wind Domestic Power Generation











Embark on Festo's specialized program to master Solar and Wind Domestic Power Generation safely and effectively. Start with eLearning courses on Sustainability and Renewable Energies, then transition to practical application with the Trainer Familiarization and Safety eLab course. Gain hands-on experience through dedicated eLab courses on Solar modules and Wind turbines, acquiring essential skills for integration. Conclude your journey with the Going Green eLab course, empowering you to implement sustainable power solutions in everyday life. This comprehensive program ensures a deep understanding of green power sources, prioritizing safety and competence at every step.

Renewable Energy

Learning Path

Courses

- Sustainability – What Is It All About? | eLearning Course
- Renewable Energies | eLearning Course
- Energy Fundamentals | eLab Course
- Trainer Familiarization and Safety | eLab Course
- Solar/Wind Systems | eLab Course
- Solar Module | eLab Course
- Wind Turbine | eLab Course
- Going Green | eLab Course

To the Learning Path

Renewable Energy

Learning Path

Solar Thermal Systems











Dive into Solar Thermal Systems with Festo's curriculum. Start with Sustainability and Renewable Energies eLearning courses to grasp eco-friendly principles. Progress to practical eLab courses: Introduction to Solar Thermal Energy and Solar Thermal Energy Systems, for hands-on learning. Master advanced concepts with Multi-Loop Systems and Evacuated Tube Solar Collectors eLab courses, exploring efficient solar heat capture. This path equips you with key insights into solar thermal technology, preparing you for a future in sustainable energy solutions.

Renewable Energy

Learning Path

Courses

- Sustainability – What Is It All About? | eLearning Course
- Renewable Energies | eLearning Course
- Introduction to Solar Thermal Energy | eLab Course
- Solar Thermal Energy Systems | eLab Course
- EDS Solar Thermal | User Guide
- Multi-Loop Systems | eLab Course
- Evacuated Tube Solar Collectors | eLab Course

To the Learning Path

Building System Technology

Learning Path

Building Systems





Enhance your understanding of building systems with the Building Systems learning path. Explore the fundamental principles of heating, ventilation, and air conditioning (HVAC) systems, focusing on the utilization of direct digital control through the BACnet protocol. By engaging with this learning path, you will acquire the essential skills needed to effectively manage and control HVAC systems in modern building environments.

Building System Technology

Learning Path

Courses

- Basic Motor Control Technology | eLab Course
- Basic Motor Control Technology | Evaluation

To the Learning Path

Building System Technology

Learning Path

Building Systems - EU











Explore the Building Systems - EU learning path to gain essential knowledge and skills in building automation and HVAC systems. This program covers the basic principles of heating, ventilation, and air conditioning (HVAC) using direct digital control (BACnet), providing a solid foundation in modern building management systems. Learn about smart home technology and apply your knowledge by setting up a smart home system, enhancing your understanding of automation in residential environments. By completing this learning path, you will develop the expertise necessary to implement and manage advanced building systems, contributing to improved energy efficiency and user comfort in various settings.

Building System Technology

Learning Path

Courses

- Building HVAC – Direct Digital Control (BACnet) | eLab Course
- Smart Home | eLab Course
- MQTT im Smart Home | eLab Course
- KNX im Smart Home | eLab Course
- Building HVAC – Direct Digital Control | Evaluation

To the Learning Path

IIoT and Industry 4.0

Learning Path

Artificial Intelligence in Production











This learning path introduces the basics of artificial intelligence with a focus on production environments. Participants start with short videos and theory covering AI concepts and deep learning. Practical tasks involve applying AI techniques to solve production-related challenges. The course concludes with an evaluation to verify understanding of AI fundamentals and their application in industrial settings.

IIoT and Industry 4.0

Learning Path

Courses

- Artificial Intelligence – Explained in 5 Minutes | eVideo
- Einführung in die Künstliche Intelligenz | eTheory Course
- Deep Learning – Explained in 5 Minutes | eVideo
- Artificial Intelligence in Production | eLab Course
- Basics of Artificial Intelligence | Evaluation

To the Learning Path

Environmental and Renewable Energy

Learning Path

Renewable Energy Production and Storage











Explore the Renewable Energy Production and Storage learning path to understand sustainability and renewable energy technologies. Begin with an introduction to sustainability, covering its dimensions and measures to promote sustainable practices in industry and daily life. Learn about lead-acid and lithium-ion batteries, focusing on their charge/discharge characteristics and common charging methods. The course also provides an overview of renewable energy sources and their applications. Delve into Solar power systems, which convert sunlight into electrical power for equipment or local AC networks. Discover how to produce electrical energy from solar power, emphasizing photovoltaic panel operation. Additionally, learn the basics of wind power and the function of doubly-fed induction generators used in wind turbines. Finally, explore home energy production, covering AC power generation from DC sources derived from renewable resources or stored in batteries. By completing this learning path, you will gain the knowledge and skills necessary to advance renewable energy solutions and sustainable practices.

Environmental and Renewable Energy

Learning Path

Courses

- Sustainability – What Is It All About? | eLearning Course
- Lead-Acid Batteries | eLab Course
- Lead-Acid Batteries | Evaluation
- Lithium-Ion Batteries | eLab Course
- Lithium-Ion Batteries | Evaluation
- Renewable Energies | eLearning Course
- Introduction to Wind Power | eLab Course
- Solar Power | eLab Course
- Solar Power | Evaluation
- Home Energy Production | eLab Course
- Doubly-Fed Induction Generators | eLab Course

To the Learning Path

Integrative STEAM

Learning Path

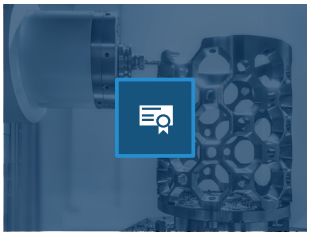
Interdisciplinary Engineering: STEAM Education and Bionics











Discover the interdisciplinary wonders of STEAM education, exploring how science, technology, engineering, arts, and mathematics intersect. Through hands-on experimentation with our Bionics Kit and Bionic Flower, you'll immerse yourself in the captivating field of Bionics. Gain a solid foundation in engineering fundamentals, covering topics like electricity, electronics, mechanics, and mechatronics. Additionally, you'll acquire practical insights into process technology, automation, robotics, and aerodynamics. Master essential technical tools such as CAD, CNC milling, and CNC turning, while also exploring sustainable energy solutions and environmental technologies. Lastly, uncover the versatility of materials in our plastics, fiber optics, and laser modules, expanding your understanding of material science and technology.

Integrative STEAM

Learning Path

Courses

- STEAM Education Approach Bionics Kit | Learning Video
- Bionic Flower | eLab Course
- Introduction to Exploring Electricity | eLab Course
- Introduction to Exploratory Electronics | eLab Course
- Introduction to Exploring Mechatronics | eLab Course
- Introduction to Exploring Mechanisms | eLab Course
- Introduction to Process Engineering | eLab Course
- Introduction to Automation and Robot | eLab Course
- Introduction to Aerodynamics | eLab Course
- Introduction to CAD | eLab Course
- Introduction to CNC Mill | eLab Course
- Introduction to CNC Lathe | eLab Course
- Introduction to Alternative Energy | eLab Course
- Introduction to Environmental Technology/Water | eLab Course
- Introduction to Plastics | eLab Course
- Introduction to Fiber Optics and Lasers | eLab Course
- Introduction to Engineering and Stress Analysis | eLab Course

To the Learning Path

Organization and People

Learning Path

Lean Management











The “Lean Management” program is your gateway to operational excellence. Beginning with foundational courses such as “Introduction to Lean Production,” you delve into advanced topics like production control, material flow optimization, and Lean Production methodologies. Practical courses on 5S, Poka Yoke, and TPM ensure you gain hands-on skills for workplace organization and error prevention. By the end of the program, you emerge with a deep understanding of Lean principles and the ability to implement them effectively to enhance productivity, minimize waste, and create more value.

Organization and People

Learning Path

Courses

- Introduction to Lean Production | eTheory Course
- Maximizing Machine and Plant Effectiveness | eTheory Course
- Basics of Production Control | eTheory Course
- Selected Methods of Production Control | eTheory Course
- Designing Material Flows in Companies | eTheory Course
- Lean Production | Evaluation
- Value Stream Analysis and Mapping | eLearning Course
- 5S – Workstation Organization | eLearning Course
- Poka Yoke | eLearning Course
- TPM – Total Productive Maintenance | eLearning Course

To the Learning Path

Electrical Technology Curriculum

Learning Paths to Build Solid Electrical Skills



Adaptable qualification plans

The Electrical Technology Curriculum is a flexible, modular training program designed to equip a wide range of professionals—including electrical engineers, technicians, operators, and maintenance personnel—with the essential skills to operate, maintain, and troubleshoot electrical systems across diverse industries and applications.

It features ready-to-use, fully customizable learning paths and courses that combine digital content, hands-on equipment, and software tools, providing learners with practical experience and preparing them for real-world challenges.

Your benefits

- Discover ready-made learning paths and courses that fit right into your program.
- Speed up lesson prep with turnkey materials and activities.
- Easily see how each topic connects—with clear prerequisites and follow-ups.
- Inspire students with engaging, modern resources and learning tools.
- Measure progress with assessments.
- Develop learners' real-world electrical skills.
- Stay ahead with up-to-date, industry-aligned teaching.


l Wiring
Show More
Basic Motor Control Technology
Show More
Learning Experience
Back
Home
Search
My Learning
Assignments
Organization
Learners
EN
FESTO
Capacitors and Inductors
Version 3.0
Teaches the fundamentals of capacitors and inductors in dc and ac circuits.
Learning Time: 10 hours
Difficulty: Beginner
Language: English
Category: Electricity and Electronics
eLab Course
Public
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Add to Favorites
Show Course
Structure
7 Learning Units
Capacitors and Inductors
01 min
Course Preliminaries
07 min
Exercise 1: Capacitors
02:59 h
Exercise 2: Inductors
03:41 h
Exercise 3: Project – Car's Interior LED Light Control Circuit
35 min
Exercise 4: Capacitors in AC Circuits
01:24 h
Exercise 5: Inductors in AC Circuits
01:23 h
Edit the Course
Show Structure
Equipment
2 Required
Learning Outcomes
5 Exercises
Frequently Asked Questions
Contact us
Servo Mot

Electrical Technology Curriculum

Topic Overview

Basic skills



Basics of Electricity and Electronics
- Basic Electricity - Electeo
- Basic Electronics - Electeo

Electrotechnical Safety
- Electrical and Industrial Safety
- Electrical and Industrial Safety - EU

Electrical and automation skills



Industrial Electrical Installation
- Industrial Wiring
- Industrial Power System

Electric Motor Control
- Electrical Machines
- Electrical Machines - EU
- Basic Motor Controls

Automation Technologies
- PLC Programming – SkillsConveyor
- Sensors and Smart Sensors

Building Systems
- Building Systems
- Building Systems - EU

Pneumatics
- Pneumatics and Electropneumatics – Americas
- Pneumatics and Electropneumatics

→ Get a detailed overview of the curriculum and direct links to learning paths in Festo LX

Advanced electrical and automation skills



Condition Monitoring and Servicing
- Smart Maintenance

Modern Electric Motors and Drives
- Frequency Converters - EU
- Stepper and Servo Motors

Advanced
- Advanced PLC Programming with TIA Portal – MPS 400
- Machine Safety

Power Electronics
- Power Electronics

Quality of the Power Supply
- Power Factor Correction

Specialized skills



Power Generation, Transmission and Distribution
- Power Generation, Transmission and Distribution - Fundamentals of Power Systems
- Smart Grid-Protection and Control Mechanisms
- Power Generation, Transmission and Distribution - Advanced Transmission and Distribution Systems

Renewable Energy Systems
- Solar and Wind Domestic Power Generation
- Renewable energy production and storage
- Solar and Wind Power

Process Automation
- Fundamentals of Process Automation

Mechatronics Technician Curriculum

Learning Paths to Build Solid Mechatronics Skills



The Mechatronics Curriculum

is a flexible, modular training program designed to prepare the next generation of professionals for roles in development, service, maintenance, and machine operation.

The curriculum places a strong emphasis on understanding mechatronic systems as a whole. Building on this foundation, it teaches all essential skills—from installation and commissioning to analysis, troubleshooting, and efficient maintenance.

Instructors and trainers benefit from ready-to-use learning paths, hands-on training systems, and modern digital tools. All digital resources are conveniently accessible via Festo LX, enabling a highly effective and contemporary mechatronics training experience.

The range of topics spans from the fundamentals of metalworking to the infrastructure and digitalization competencies required in Industry 4.0. Each learning package builds logically on the previous one, while still offering flexible entry points, and integrates course materials, hardware, and software into compact, easy-to-understand learning units.

The provided learning paths can be used as-is or adapted to the specific needs of learners—ideal for entering vocational training, applying skills on the job, or preparing for certification exams.

→ Visit the website for more info


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Mechatronics Technician Curriculum

Topic Overview

Mechanical Engineering Fundamentals



Mechanical Manufacturing Fundamentals
- Introduction to the SkillsMagazine Kit Project
- Solderless and permanent connection technology
- Technical Documentation
- Drilling
- Measurement Technology and Quality Assurance
- Turning
- Milling
- Additive Manufacturing and CAx-Systems
- CNC Manufacturing
- Commissioning of the Stacking Magazine (SkillsMagazine Kit)

Pneumatic
- Pneumatic Fundamentals

Electropneumatic
- Electropneumatic Fundamentals

Automation Fundamentals



Automation Fundamentals Industry
- Commissioning the SkillsConveyor (unmounted)
- Hard-Wired Programmed Control (Industry)
- AC Motor Control (Industry)
- Basics of PLC Programming LOGO!
- Basics of Sensors
- Basics and Applied PLC Programming S7

Automation Fundamentals Laboratory
- Commissioning the SkillsConveyor (Industry-mounted)
- Hard-Wired Programmed Control (Laboratory)
- AC Motor Control (Laboratory)
- Basics of PLC Programming LOGO!
- Basics of Sensors
- Basics and applied PLC Programming S7

Automation Fundamentals Industry (US)
- Commissioning of the SkillsConveyor (mounted)
- Hard-Wired Programmed Control (Industry)
- AC Motor Control (Laboratory) US Variant
- Basics of PLC Programming LOGO!
- Basic of Sensors
- Basics and Applied PLC Programming S7

→ Get a detailed overview of the curriculum and direct links to learning paths in Festo LX

I4.0-Related Technology Topics



Fundamentals of Smart Automation Technology
- Basics Sensors and Actuators
- Introduction to Industry 4.0
- From Object ID to Product Memory with RFID
- Plant Visualization with HMI
- Smart Sensors for Smart Systems

Smart Safety and Maintenance Technologies
- Basics Pneumatics
- Basics of Machine Safety
- Introduction to Industry 4.0
- Smart Maintenance

Modern Control Technologies for Intelligent Systems
- Basics of PLC Programming
- System Expansion
- Introduction to Industry 4.0
- PLC Programming for Smart Systems
- Artificial Intelligence in Production

I4.0-Related Infrastructure Topics



Industrial Communication and IT-security
- Industrial Communication with PROFINET
- Industrial Communication with OPC UA
- Plant Control and Commissioning with MES
- Energy Efficiency in Production
- IT-Security for Production Systems

Mobile and Autonomous Robotics
- Mobile and Autonomous Robotics with Robotino 4

Step forward with Festo LX

Ready to learn more? We're here to support you every step of the way in crafting engaging and individualized learning experiences.

If you have any questions or requests regarding Festo LX functionalities, content, or subscriptions, we're just a click away!

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