

# Didactic Industrial Workforce Development

## Course Offering 2024

**FESTO**



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## Training Venues – 2024



**Gauteng** - Johannesburg

**Western Cape** - Cape Town

**KwaZulu-Natal** - Durban

**Eastern Cape** - Gqeberha

**Eastern Cape** - East London

### Accreditation

Selected courses are aligned to the South African Qualifications Authority (SAQA) unit standards with merSETA. We have also received CPD accreditation through the Engineering Council of South Africa (ECSA) for several courses which will benefit registered engineers, technicians and technologists. Additional information is available on request.

For an updated schedule, please visit [www.festo.co.za](http://www.festo.co.za) to view our training and consulting courses.



# Festo Online Digital Learning Platform



Today's digitalised world needs a holistic approach to technical education and training. This is exactly what the Festo Learning Experience (LX) is designed for. Festo LX is a cloud-based learning portal that offers didactically prepared learning content for many technical areas. The learning portal combines industry expertise with Festo Didactic know-how to create unique learning experiences that are based on multimedia learning nuggets. The nuggets can be easily adapted and combined to form individual learning paths. In this way, courses can be perfectly tailored to your needs as a training facilitator or learner.

## A wide range of topics

On Festo LX, you will find an abundance of learning content for many areas of technical training and further education: from factory automation, fluid power to Industrial Internet of Things (IIoT) and more.

## Training Target group

Artisans, technicians, engineers, production teams, maintenance and instrumentation staff.

## Benefits for industry clients

- High-quality standards of Festo Didactic learning resources and Festo industry expertise.
- Quick learning success through multimedia learning support.
- Receive customised learning paths specifically created for you.
- Monitor your employees' learning progress.
- Benefit from reliable IT security standards.

## Available functions

- Learning evaluation
- Equipment management
- Connected learning
- LX Creator
- Microlearning
- Competency management
- Mobile learning
- Learner management

Join us on our journey and sign up for a free-access demo account. This online platform is purchased using vouchers. Interested individuals and training managers can contact [didacticTaC.za@festo.com](mailto:didacticTaC.za@festo.com) for more information.

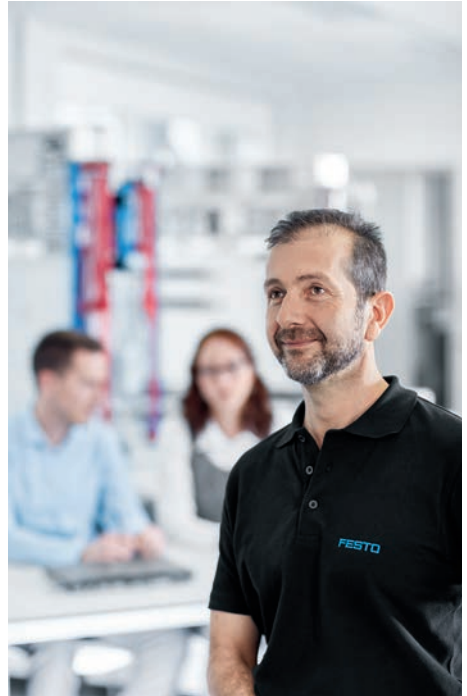
# Festo interactive practical webinars

As market leaders in technical training, we have expanded our training offering to online training courses. This means that our customers can attend practical training courses in the safety and comfort of their homes and workplace.

## Not just a regular webinar

Although we utilise the same platform (web-based) as conventional online training, Festo practical webinars are worlds apart from “sit-back-and-relax” online training courses.

During some of the webinars, we utilise our award-winning FluidSIM® Software. Every participant receives access to a full version of FluidSIM® for the duration of the webinar, using their own laptop/pc to design, simulate and fault-find pneumatic, electro-pneumatic, as well as hydraulic circuits. Attendees get to interact, receive guidance and assistance from our experienced trainers. We utilise CoDeSys programming software for our PLC webinars in the same way. Participants are given the opportunity to interact as in face-to-face training courses. By completing and submitting assignments during the course of the webinar, competence is measured and assessed.

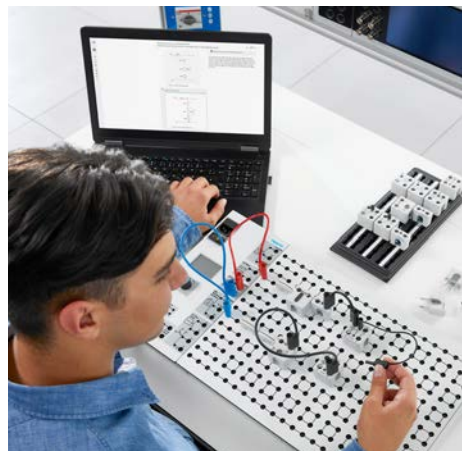


## Webinar dates and times

### Time and duration

Our Interactive Webinars are conducted over 5 days, 2 hours per day. All five days need to be attended to complete the course. Courses can be customised to cater for the specific needs of the customer.

Please contact us at [didacticTaC.za@festo.com](mailto:didacticTaC.za@festo.com) to request a quote or make a booking.



Click here for the latest webinars

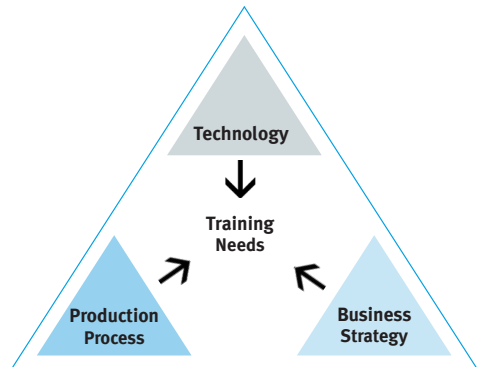
# Festo Industrial Workforce Development – The Training Needs Analysis (TNA)

## Building a basis for value-adding training

Training Needs Analysis: The Festo internationally tried and tested consulting service for analysing as well as planning strategic workforce development.

### What is TNA?

TNA is the basis for demand-oriented and systematic personnel development. The holistic approach of Festo Didactic Training and Consulting includes executives and identifies the levels of work assignments, processes, as well as corporate strategy.



*The TNA Core Triangle*

### What is the outcome of the TNA?

TNA is detailed information on a personnel's current technical expertise and knowledge levels. It is measured against their workplace requirements and international standards. These findings will provide an overview of current and future skills gaps and their possible impact on the company's performance.

### The Training Needs Analysis Principle

#### Workplace Requirements

The technical knowledge necessary for the workplace is evaluated using interviews, observations and tests. Possible knowledge gaps are identified. The basis is provided by assessments of the employee, supplemented by knowledge tests and practical exercises. If required, knowledge of specific workplaces and processes in the production environment is also evaluated.

#### Production Processes

An inspection of the production is undertaken to gather information about the processes and technologies in use. Planned organisational changes and the introduction of new technologies are captured. This is vital to identify possible future qualification gaps.

### Business Strategy

A discussion with the responsible managers is arranged to establish the training needs from a business perspective. Managers are asked strategic questions such as: What are their targets? Which key performance indicators are measured? Are there specific standards that need to be achieved?

To make the most out of the Training Needs Analysis, we address specific skills gaps by combining different platforms such as Festo LX, face-to-face training courses and customising our in-house training courses according to our customer's specific needs. More value is extracted, and the return on the investment is much higher.

We invite you to use our expertise to get the most out of your training and reap the benefits of competent employees, higher efficiencies and increased productivity. At Festo Didactic, our mission is to provide technology training for industrial customers worldwide – “we foster sustainable growth and keep the world moving”.

## IDEA® Philosophy



Our Automation Skills Consultants provide training programs on or offsite and use the **IDEA®** philosophy to create bespoke interventions:

**Identify** your needs through the TNA.

**Develop** specific course content to address the skills gaps according to the specific needs.

**Engage** in training activities and interaction.

**Apply** the skills taught in the physical work environment.



# The Festo Eduvan: Train from anywhere



## Eduvan history:

In 2016, the Festo Didactic Eduvan concept was successfully proven with on-site customer training and a road trip that covered three provinces. Customers experienced training in the first fully furnished technical mobile training lab. Since then, the Eduvan has been travelling around the country, training our customers in comfort and convenience.

## What it offers

The Eduvan can accommodate twelve participants at a time on any of our offered training courses. The courses are of the same standard as our courses offered in Gauteng, KwaZulu-Natal, Eastern Cape and Western Cape.

In addition, all equipment used for practical exercises is similar to the ones in our fixed venues and comprises of real industrial components.

## On-site training

Skills learnt are much more than just listening, reading and writing; they are about doing. The on-site training approach allows training excursions to take place, where hands-on troubleshooting and analyses can add real value and return on investment for attendees.

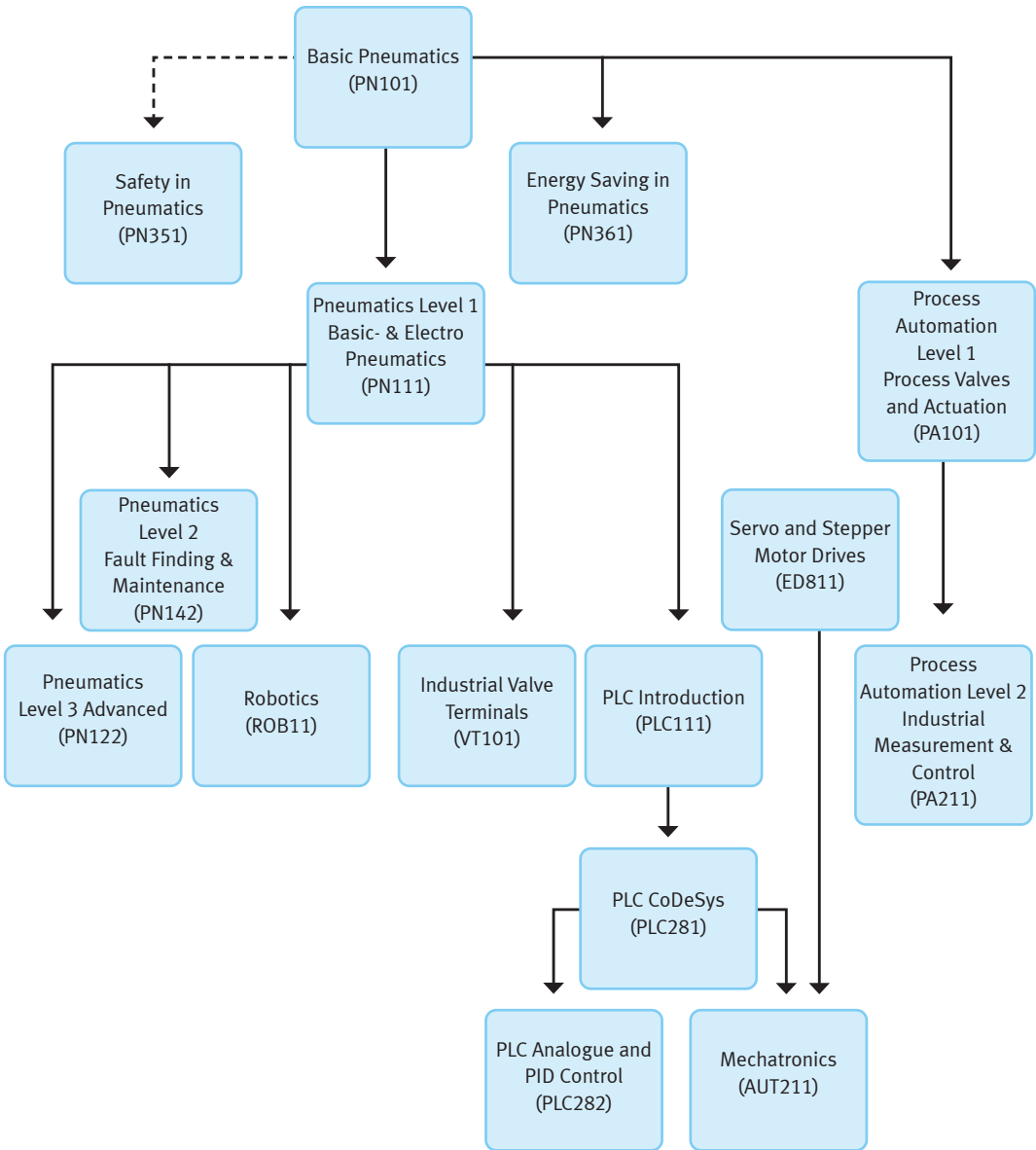
## Benefits for you

- Reduced travel costs and admin work.
- Reduced time away from operation.
- On-site availability of critical personnel.
- Training in remote areas.

# Training development plan

Below is a suggested training development plan for students attending the PLC and Pneumatics courses.

This diagram shows the prerequisites and provides a guideline which ensures that participants in a specific course understand the concepts covered in previous courses to receive the maximum value from the course.



# Training courses: Pneumatics

## Basic Pneumatics

### PN101

The course deals in detail with the most up-to-date products, current tools and methods in the industry. Our principle is learning from the real world based on basic principles and core concepts.



### Target Group

Everyone who deals with pneumatic systems in their working environment.

### Contents

- Objectives of low-cost automation.
- Basic principles of compressed air supply, which would include: production, preparation and distribution.
- Power section devices (linear and rotary actuators).
- The use of directional control valves, flow controls, pressure and time-control valves and sensors.
- Structure and function of pneumatic devices and valves.
- Basic logic functions and their application.
- Symbolic representation of devices and standards (ISO 1219).
- Systematic design of circuit diagrams.
- Reading pneumatic circuit diagrams.
- Operating modes in pneumatic control systems.
- Safety regulations and valid industrial standards.
- Typical industrial circuits.
- Identifying and eliminating faults.
- Practical exercises for all “hands-on” circuits.

### Outcomes

After completing this course, the participant will be able to:

- Design, assemble and test basic pneumatic circuits.
- Identify and describe the design, features and operation of pneumatic components.
- Identify and explain symbols for pneumatic components.
- Read and interpret pneumatic circuit diagrams.
- Interpret technical specifications and data relating to pneumatic components.
- Apply the fundamentals of compressed air generation and preparation.

### Requirements

Technical understanding.

### Duration

3 days

### Part No.

559395

### CPD points

3 points



Click here for the latest schedule and pricing for this course

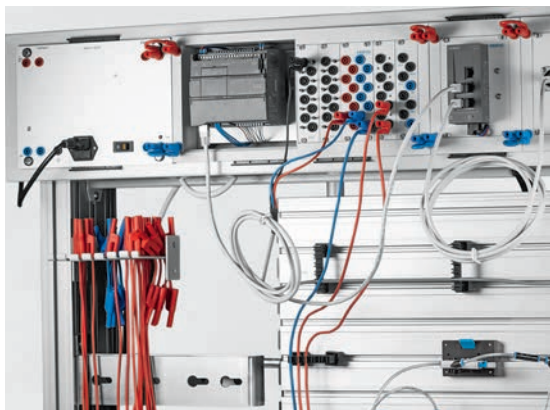
# Pneumatics - Level 1

## (Includes Electro Pneumatics)

### PN111

This course was designed to fulfil the expectations of people who need to understand and apply the requirements of modern industrial pneumatics with real shop-floor applications. The training course sets a good background for further automation training.

This course combines the fundamentals of the Basic Pneumatic and Electro-Pneumatic courses in a neat application-orientated package.



### Target Group

Everyone who deals with pneumatic systems in their work environment.

### Contents

- Combination of electrical control section and pneumatic power section.
- Basic principles of compressed air supply which include production, preparation and distribution.
- Different actuators and their applications.
- The use of directional control valves, speed control valves and sensors.
- Structure and function of electrical switching devices, timers and solenoid valves.
- Basic logic functions and signalling functions.
- Valve technology.
- Symbolic representation of devices and standards ISO1219, IEC61346.
- Safety regulations and stringent industrial standards.

### Outcomes

After completing this course, the participant will be able to:

- Design, assemble and test basic pneumatic and electro-pneumatic circuits.
- Identify and describe the design, features and operation of electro-pneumatic as well as electrical components.

- Identify and explain symbols for pneumatic, electro-pneumatic and electrical components.
- Interpret technical specifications and data relating to pneumatic components.
- Understand the fundamentals of compressed air generation and preparation.
- Describe the functional relationship between pneumatic and electrical components.
- Design, assemble and test an electro-pneumatic circuit.
- Comprehend the role of a PLC in automation.

### Requirements

Technical understanding of pneumatic principles. The “Basic Pneumatic” (PN101) course is advisable.

### Duration


4 days

### Part No.

566228

### CPD points

4 points

 [Click here for the latest schedule and pricing for this course](#)

# Pneumatics Level 2 - Fault finding, Troubleshooting and Maintenance

## PN142

This course allows you to extend your technical and methodological knowledge. It also provides attendees with the ability to understand the functional relationships of complex machinery, identify and eliminate faults using a troubleshooting procedure on actual industrial components as well as systems. It develops the mindset around systematic thinking and actions to locate as well as solve problems in automation systems.



## Target Group

Design engineers, plant engineers, maintenance staff and instructors.

## Contents

- Functional relationships between mechanical elements, pneumatics, electronics and PLCs.
- Design and function of pneumatic and electro-pneumatic components.
- Basic principles of sensor technology.
- Reviewing, completing and using machine documentation.
- Developing and applying troubleshooting strategies in a team.
- Optimising systems using fault documentation.
- Learning and applying safety regulations as well as stringent standards.
- Process Failure Mode and Effect Analysis (FMEA) as a method of preventive maintenance.
- Optimisation of a production-related system with Total Productive Maintenance (TPM) components.
- Practical exercises on systematic troubleshooting.

## Outcomes

After completing this course, the participant will be able to:

- Describe the functional relationship between mechanical, pneumatic, electronic and PLC components.
- Use and master problem solving, troubleshooting techniques and strategies for complex pneumatic, electro-pneumatic, PLC industrial systems and equipment.
- Become familiar with function plans and machine fault lists.
- Be familiar with the safety aspects of pneumatic, electro-pneumatic and PLC systems.
- Effectively use PLC's to identify and locate failures in an electro-pneumatic system.

## Requirements

The "Pneumatics level 1" (PN111) course.

## Duration


4 days

## Part No.

12313171

## CPD points

4 points

 [Click here for the latest schedule and pricing for this course](#)



# Pneumatics Level 3 - Advanced

## PN122

Extend your technical and methodical knowledge of modern industrial pneumatics. This course addresses specific topics relating to maintenance, the ability to design and understand the functional relationships of complex pneumatic, electro-pneumatic systems as well as machinery.

This course is a continuation of using both pneumatics and electro-pneumatics as an application-orientated package.



## Target Group

Design engineers, plant engineers, maintenance staff and instructors.

## Contents

- Combination of pneumatic power section and electrical control section (review).
- Pneumatic and Electrical Symbolology (review) ISO 1219, IEC61346.
- Power section devices and actuators. Specific applications: bellows, fluidic muscle, rodless and rotary drives, grippers and pulse ejectors.
- Valves and basic logic functions (binary control, two-hand control).
- Sequence control:
  - Cascade Control and sequence stepper.
  - Co-ordinated Electrical sequence and logic controllers.
- Vacuum technology.
- Emergency controls (soft start).
- Rotary Index tables.
- Strip Feed units.
- Safety regulations and valid industrial standards.
- Practical exercise and typical industrial circuits.

## Outcomes

After completing this course, the participant will be able to:

- Design, assemble and test complex pneumatic and electro-pneumatic control systems.
- Identify and describe the design, features and operation of specific application power section devices and valves.
- Describe the fundamentals of vacuum generation and applications.
- Understand the function of safety and emergency controls in pneumatic and electro-pneumatic systems.
- Describe the function and applications of low-pressure pneumatics.

## Requirements (Suggested)

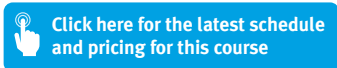
The "Pneumatics level 1" (PN111) course.

## Duration

4 days

## Part No.

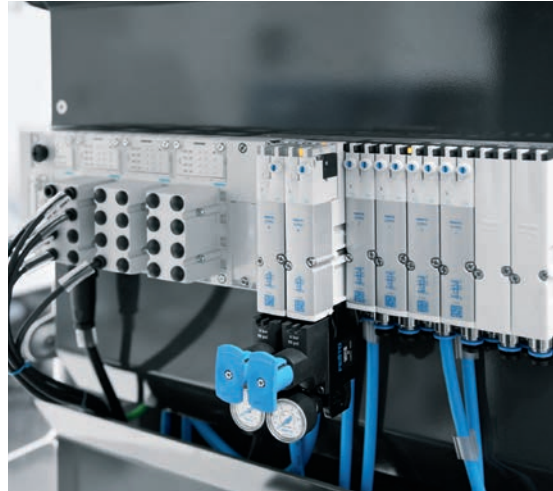
12312362



# Industrial Valve Terminals 1

## VT101

Valve terminals are banks of pneumatic valves placed conveniently in one place. They can dramatically reduce piping and wiring on machines. These valves help to keep the pneumatics of complex systems simple, compact and accessible. Valve terminals can be controlled by means of PLCs or through higher-level communication protocols. Considering the high density of technology packed into these devices, they can appear complex. This course serves to simplify their function, control and give candidates the insight required to confidently understand, service, repair, modify, configure and troubleshoot valve terminals.



## Target Group

Anyone exposed to pneumatic valve terminals at their workplace.

## Contents

- Valve terminal anatomy.
- Types of valves in valve terminals.
- Special functions of air channels.
- Control methodology
  - Discrete I/O.
  - Fieldbus protocols.
- Troubleshooting of valve terminals.
- Tools for analyses of devices.
- The future of Valve Terminals.

## Outcomes

After completing this course, the participant will be able to:

- Familiarise with different Fieldbus connections and configurations to PLCs.
- Dismantle and repair a valve terminal.
- Troubleshoot a valve terminal.
- Use online diagnostic tools to troubleshoot and configure valve terminals (using the Festo Maintenance Tool).

## Requirements

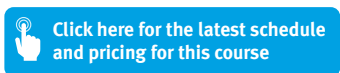
The “Pneumatics level 1” (PN111) course.

## Duration

2 days

## Part No.

12309283



# Energy Saving in Pneumatic Systems

## PN361

Save energy – save costs. Energy saving is becoming vital for the sustainability of a business, especially with the high cost of energy. In large factories or small workshops, the intelligent use of every energy source, sizing and selection of components can save significant amounts of cost, time, as well as waste. Compressed air is a very important energy source for industrial production. The possibility of saving costs from compression to consumption of air is enormous, but everything begins with the skill of the people who work with it.

This course focuses on cost-saving and improving the areas of compressed air production, distribution, preparation and optimisation of pneumatic circuits.

## Target Group

Operators, maintenance staff, engineers, designers and trainers.

## Contents

- The cost of compressed air with measurements.
- The cost of leaks.
- The compressed air consumption of various circuits.
- The cost of over and under-sizing of components.
- Sizing of equipment for optimal efficiency.
- Energy-efficient circuits.
- Correcting the failures that cause efficiency wastes.

## Outcomes

After completing this course, the participant will be able to:

- Understand and evaluate the relationship between consumption and the cost of energy sources.
- Apply efficiency measures in the preparation and distribution of compressed air.
- Apply efficiency measures in the use of compressed air.
- Correct the failures that cause efficiency wastes.



- Apply efficiency measures in pneumatic circuits.
- Select efficient components for various applications.
- Measure the air consumption of various pneumatic applications.
- Improve the lifetime of various pneumatic components.

## Requirements

The “Basic Pneumatics” (PN101) course.

## Duration

2 days

## Part No.

12312419



Click here for the latest schedule and pricing for this course

# Safety in Pneumatic Systems

## PN351

Machine building and design have become more complex; therefore, more careful attention must be devoted to new and current safety standards.

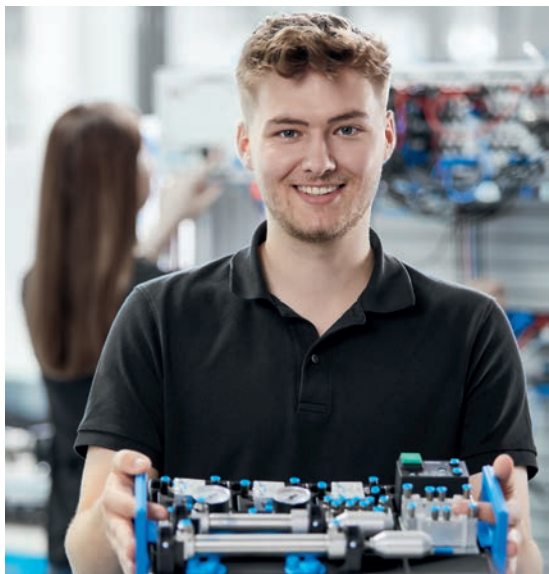
Compressed air is capable of storing large amounts of energy which can be released again very quickly. In the field of pneumatics, compressed air is the medium which makes it possible to run the system. Due to the tremendous forces which occur at high speeds, pneumatic equipment can be very dangerous; thus knowledge regarding the safe layout of pneumatic circuits is important to employees to ensure safe practices. The utmost goal is to prevent any types of personal injury or property damage.

## Target Group

Everyone who deals with pneumatic systems in their working environment.

## Contents

- Pneumatic safety – essential safety rules.
- Typical safety functions in pneumatics:
  - Safe venting of the system.
  - Safe venting of actuators.
  - Safe stopping of actuators.
  - Safely reduce speed.
  - Safe reversing of actuators.
  - Prevention of accidental start-up.
  - Safely reduce force and torque.
  - Safe hold-up of loads.
  - Safe pressure monitoring.
  - Safe positioning of actuators.
- Protective devices and emergency equipment – types, design and function.
- Risk assessments.
- Commissioning procedures, shut-down, pre-start and start-up.



## Outcomes

After completing this course, the participant will be able to:


- Follow the essential safety rules when using pneumatics to build circuits.
- Consider and implement the key safety functions when designing a pneumatic system.
- Be able to identify and understand the function of the different protective devices and emergency equipment and know how and when to use them.
- Conduct a risk assessment for a machine.
- Understand and follow the correct commissioning procedures for a pneumatic system during shut-down, pre-start and start-up.

## Requirements (Suggested)

The “Basic Pneumatics” (PN101) or equivalent course.

## Duration

1 Day

 [Click here for the latest schedule and pricing for this course](#)

# Training courses: Hydraulics

## Hydraulics Level 1- Basic

### HY511

This course provides insight into hydraulic hardware technology and its function. You will learn to produce and read circuit diagrams. Furthermore, you will be equipped with the skills to set the speed, pressure and position for hydraulic drives. As with all our courses, practical work is an important component.



### Target Group

Everyone who deals with hydraulic systems in their work environment.

### Contents

- Standards for equipment and circuit diagram representation.
- Design and function of hydraulic power supply systems.
- Physical principles.
- Measurement of volumetric flow rate, pressure and temperature to aid troubleshooting.
- Hardware technology and characteristic data for valves and actuators.
- Reading and interpreting basic hydraulic circuit diagrams for direction, speed, pressure and position.
- Basic principles of systematic troubleshooting.

### Outcomes

After completing this course, the participant will be able to:

- Name the basic hydraulic components and their symbols.
- Explain the physical principles of hydraulics and use them for troubleshooting.

- Comprehend how the volumetric flow, pressure and temperature are measured in a hydraulic system and what the values mean for evaluation of the system.
- Design, assemble and test basic hydraulic circuits.
- Understand, read, and interpret basic hydraulic circuit diagrams.
- Interpret the characteristics of hydraulic valves data and drive elements.

### Requirements

Technical understanding.

### Duration


3 days

### Part No.

559448

### CPD points

3 points

 [Click here for the latest schedule and pricing for this course](#)



# Hydraulics Level 2- Advanced

## HY521

This training course combines hydraulics and electro-hydraulics for maintenance staff to extend their technical as well as methodical knowledge. This enables specific maintenance related topics to be dealt with in more detail.

### Target Group

Design engineers, plant engineers, maintenance staff, instructors and everyone who deals with hydraulic systems in their work environment.

### Contents

- Standards and safety regulations in hydraulics.
- Design and function of hydraulic power supply systems.
- Design and function of hydraulic valves for controlling direction, speed, position and force.
- Hydraulic drives for linear and rotary movements.
- Electric signal control for the hydraulic power section with switching solenoid and proportional solenoid interfaces.
- Synchronised controls, valve fittings and hydraulic reservoir circuits.
- Systematic troubleshooting, damage analysis and weakness elimination.
- Intensive practical training involving designing control systems based on circuit diagrams, commissioning and testing.



### Outcomes

After completing this course, the participant will be able to:

- Identify and describe the design, features and operation of electro-hydraulic and electrical components.
- Identify and explain symbols for hydraulic, electro-hydraulic and electrical components.
- Understand the features of special applications, piloted valves, cylinders and hydraulic motors.
- Design, assemble and test electro-hydraulic circuits.
- Read and interpret hydraulic as well as electro-hydraulic circuit diagrams.
- Apply the principles of systematic troubleshooting to real applications.

### Requirements

The “Hydraulics level 1 Basic” (HY511) or equivalent course.

### Duration

3 days

### Part No.

566873



Click here for the latest schedule and pricing for this course

# Hydraulics Level 3 - Maintenance, Fault Finding and Troubleshooting

## HY142

A large percentage of spare parts sold for hydraulic plants and machinery are used to replace defective components. Most of these defects can be traced back to improper operation or maintenance. These mistakes and bad practices could cost hydraulic users hundreds of thousands of rands annually.

This course will teach maintenance staff how to avoid this situation, reduce operating costs and increase the uptime of hydraulic equipment.



## Target Group

The course is for anyone exposed to hydraulics maintenance in their practical work.

## Contents

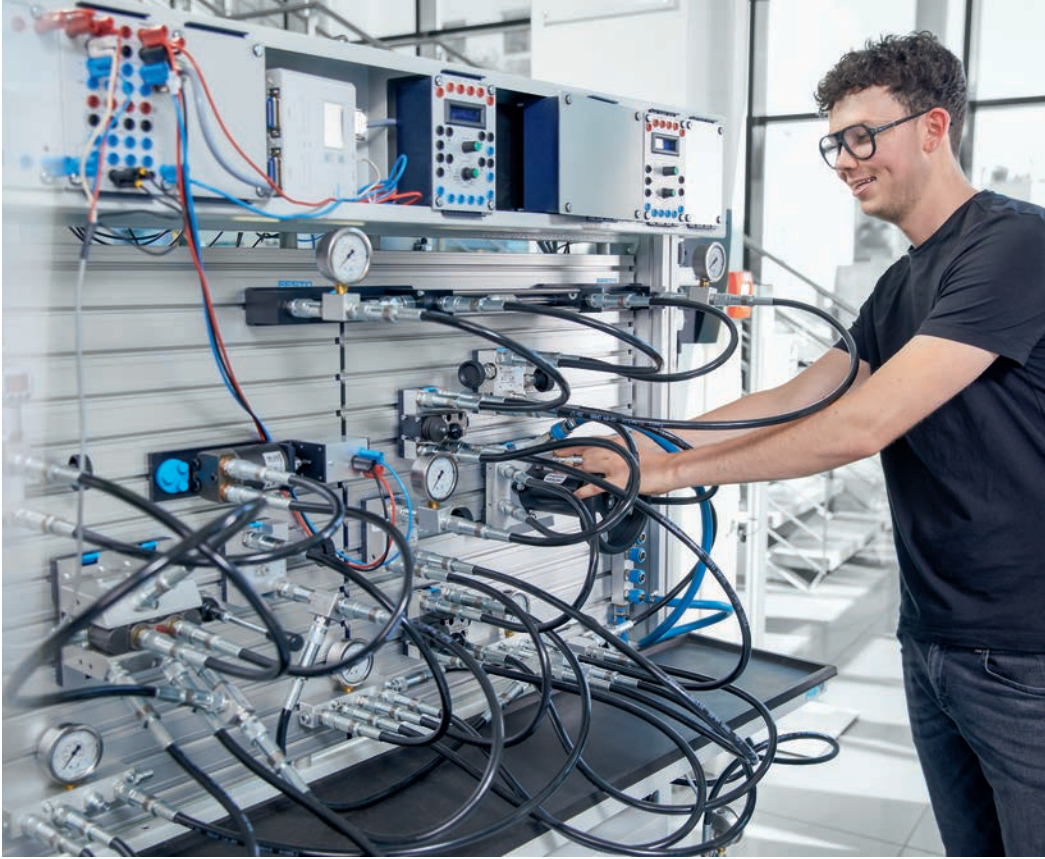
- Hydraulic equipment maintenance - why it's so important.
- Maintaining fluid cleanliness.
- Maintaining fluid temperature and viscosity within optimum limits.
- Managing hydraulic system settings to manufacturers' specifications.
- Scheduling component change-outs before they fail.
- Following the correct commissioning procedures.
- Conducting failure analysis.
- The actual cost of hydraulic fluid leaks.
- Fluid contamination and dealing with water in hydraulic fluid.
- Troubleshooting basics and how to avoid costly mistakes.
- Symptoms of common hydraulic problems and their causes.
- Locating internal leakages.
- Fundamentals of hydraulic components and cylinder repair.

## Outcomes

After completing this course, the participant will be able to:

- Describe how fluid contamination destroys hydraulic components.
- Determine appropriate fluid cleanliness for different types of hydraulic systems.
- Achieve and maintain appropriate fluid cleanliness continuously.
- Identify and rectify abnormal contamination load.
- Follow proactive maintenance routines that will save large sums of money.
- Know how to prevent damage to hydraulic systems caused by low fluid viscosity.
- Define operating temperature limits based on fluid viscosity values that maximise component life.
- Identify and rectify abnormal heat load.
- Identify faulty circuit protection devices before they cause component failure.
- Know when to schedule hydraulic component change-outs to minimise operating costs.
- Know what to do when installing hydraulic components to avoid reduced service life.
- Identify and name the causes of common hydraulic problems and how to locate them.
- Apply special techniques for troubleshooting simple hydraulic systems.
- Recognise and avoid costly troubleshooting

## Hydraulics Level 3 - Maintenance, Fault Finding and Troubleshooting continued



mistakes and get the correct diagnosis.

- Carry out effective repairs on hydraulic cylinders and components.

### Requirements


The “Hydraulics level 1 Basic” (HY511) or equivalent course.

### Duration

3 days

### Part No.

12312366

 [Click here for the latest schedule and pricing for this course](#)

# Hydraulics Level 4 - Proportional

## HY132

This course will help you become familiar with the function, actuation of proportional (or dynamic) valves and the design of basic circuits in relevant industrial applications. The extensive practical part provides you with an opportunity to design circuits, adjust parameters, and gain experience in commissioning and troubleshooting in proportional hydraulic control systems.

### Target Group

The course is for anyone exposed to proportional hydraulics in their practical work. The high level of practical relevance makes the course particularly suitable as a supplementary course for instructors.

### Contents

- Basic principles of proportional hydraulics.
- Design, function and characteristics data for proportional, directional control, pressure and flow control valves.
- Generation of target values, both analogue and digital.
- Adaptation of amplifier electronics to required conditions.
- Development and interpretation of proportional hydraulic circuit diagrams.
- Intensive practical training involving designs based on circuit diagrams and adjusting parameters for optimum commissioning.
- Instructions for maintenance, troubleshooting and commissioning.
- Introduction to servo valve technology and control.
- Proportional valves in open control loop systems and control valves in closed control loops.
- Current standards and safety regulations for practical operation and exercises.



### Outcomes

After completing this course, the participant will be able to:

- Understand the principles of proportional hydraulics.
- Explain the structure and mode of operation of proportional, pressure and flow-control valves.
- Interpret the characteristic data of proportional valves.
- Adapt amplifier electronics to the required conditions.
- Develop and read equivalent hydraulic circuit diagrams.
- Explain the principles of servo valve technology and controls.
- Explain the difference between open and closed loop control.
- Name current standards and safety regulations for industrial practice.

### Requirements


The “Hydraulics level 1 Basic” (HY511) and “Hydraulics level 2 Advanced” (HY521) course.

### Duration

3 days

### Part No.

12221201

 [Click here for the latest schedule and pricing for this course](#)

# Mobile Hydraulics

## HY152

The know-how needed to design, maintain and operate a mobile hydraulic system is becoming more important every day. Due to the complexity of the systems compared to industrial hydraulics, the skills needed to maintain and design mobile hydraulic machinery require strong mobile hydraulics fundamentals.

In this course, you will learn important details related to mobile systems, and due to many interesting mobile solutions and circuits, this course also enlarges your perspective of industrial hydraulics.

## Target Group

Maintenance staff, engineers, trainers and anyone exposed to mobile hydraulics in their work environment.

## Contents

- Hydrostatic transmission and related components.
- Steering unit.
- Working hydraulics.
- Load holding.
- Load sensing in constant and variable displacement pumps.
- Pressure and flow control.
- Fundamentals of proportional control.
- Commissioning and maintaining mobile hydraulic systems.



## Outcomes

After completing this course, the participant will be able to:

- Identify the components and explain their functions in a given mobile hydraulic circuit.
- Build and test hydrostatic transmission, working hydraulics and steering circuits.
- Explain load-sensing functions and other efficiency components.
- Be able to make adjustments for the required control parameters of mobile hydraulics.
- Measure the required parameters in a mobile hydraulic circuit.
- Systematically troubleshoot and explain maintenance procedures.
- Explain the safety measures in mobile hydraulic equipment.

## Requirements

The “Hydraulics level 1 Basic” (HY511) course.

## Duration

4 days

## Part No.

12312368



Click here for the latest schedule and pricing for this course



# Safety in Hydraulics

## HY551

Hydraulic systems in the agriculture, mining and industry are used to complete movements such as lifting, steering or changing the position of actuators. Hydraulic fluid moves through very small openings in a hydraulic system under very high pressures. Therefore, hydraulic systems and hydraulic fluid can be hazardous to workers in several common scenarios.

Proper maintenance is critical for all types of machinery and equipment, but it is imperative that the correct safety measures are followed when operating or maintaining hydraulic systems.

## Target Group

Everyone who deals with hydraulic systems in their working environment.

## Contents

- Hydraulic safety – hazards and what you should know.
- How to prevent hydraulic hose problems.
- Safety guidelines for high-pressure hydraulics.
- Hydraulic fluid safety.
- Hydraulic troubleshooting safety.
- Accumulator safety and advice for maintaining hydraulic accumulators.

## Outcomes

After completing this course, the participant will be able to:

- Understand and know all the hazards and main causes of accidents associated with hydraulic systems and how to prevent them.
- Understand and know the importance of a good preventative maintenance program to ensure safe working conditions.
- Understand and know the safety and maintenance tips to ensure hydraulic hose durability.
- Understand and know the safety guidelines for



high pressure hydraulics.

- Understand the hazards and dangers associated with hydraulic fluid and how to avoid them.
- Understand and know the importance of hydraulic component function to identify problems and how to replace a hydraulic component safely.
- Understand and know the dangers and hazards associated when working with and maintaining hydraulic gas accumulators.

## Requirements (Suggested)

The “Hydraulics level 1 Basic” (HY511) or equivalent course/experience.

## Duration

1 Day



Click here for the latest schedule and pricing for this course

# Training courses: PLC

## PLC - Introduction

### PLC111

Not every industrial application demands a complex PLC. A few inputs and outputs are often sufficient to automate a simple application quickly and reliably. A small and simple PLC that has an equally uncomplicated programming language can quickly be learned.

In this course, you will learn how to create and structure basic accurate as well as clear PLC programs.



### Target Group

Design engineers, plant engineers, programmers, maintenance staff and instructors.

### Contents

- Basic design and control of a Programmable Logic Controller (PLC).
- Input and output properties.
- Hardware and software familiarisation.
- Programming languages such as statement list, ladder diagrams and function block diagrams.
- Basic command sets.
- Creating, loading and testing industry-related sequence programs.
- Creating time delay and counter functions.
- Program editing.
- Fault analysis.

### Outcomes

After completing this course, the participant will be able to:

- Read and create hardware configurations.
- Create logic associations and sequences as PLC programs and commission them.
- Implement modes such as automatic, manual, and emergency stop.
- Combine various program modules with structured programs.
- Identify and eliminate faults using the status display.
- Troubleshoot and identify reasons for machine stoppages with the aid of the PLC program.

### Requirements

The “Pneumatics Level 1” (PN111) course (advisable).

Experience in operating a PC with a Windows interface.

### Duration

3 days

### Part No.

12312372



[Click here for the latest schedule and pricing for this course](#)

# PLC - CoDeSys: The standard in IEC 61131-3 V3.5

## PLC281

In order to master the fast-changing requirements of embedded and PLC- controlled industrial applications, it is important to master and apply different programming languages. This is complicated by the huge variety of programming software available. Differences in user interface, functionality, and command sets cause mistakes. CoDeSys, a tried and tested, globally introduced software from 3S, offers a controller development system according to the IEC 61131-3 standard with all defined programming languages independent of the hardware manufacturer. This training simplifies CoDeSys and gives participants confidence in using it.

*Each participant receives a Festo CECC CoDeSys PLC and Software (Ts & Cs apply).*



## Target Group

Design engineers, plant engineers, programmers, maintenance staff and instructors.

## Contents

- Basic design and control of CoDeSys.
- PLC Hardware configuration.
- Wiring inputs and outputs.
- Local and global addressing of variables.
- Programming languages for CoDeSys such as ladder diagram, function block diagram, structured text, instruction list, sequence function chart, and continuous function chart.
- Timer and counter functions.
- Formulating, downloading and testing industry-related sequence programs.

## Outcomes

After completing this course, the participant will be able to:

- Configure and commission a CoDeSys controller.
- Create hardware configurations.
- Create and commission PLC programs with logic associations and sequences.
- Understand and create program structures.
- Combine various program modules into structured programs.

## Requirements

The “Introduction to PLC” (PLC111) course. Experience in operating a PC with a Windows interface.

## Duration

3 days

## Part No.

12312373



[Click here for the latest schedule and pricing for this course](#)

# PLC - Analog and PID Control

## PLC282

This course will enable service and commissioning personnel to work with analogue signals and effectively optimise a plant loop. In this course you will master the principles of automatic process control using the CoDeSys Festo PLC, CECC-LK, and the operation of the feedback loop to include proportional, integral as well as derivative control modes. Advanced concepts of cascade and ratio feed-forward control will also be covered. You will also learn and practice controller tuning methods and get an overview of drawings used in industry.



## Target Group

Maintenance staff, engineers, trainers and instrumentation staff.

## Contents

- Fundamentals of analogue value processing.
- Fundamental concepts of closed-loop control.
- Optimising criteria.
- Controller selection.
- PID algorithm for digital control.
- Multi-loop control.
- Hands-on exercises.
- Flow, level, temperature and pressure loops.

## Outcomes

After completing this course, the participant will be able to:

- Perform analogue PLC programming.
- Commission a basic open-loop and closed-loop system.
- Read and design technical drawings for process technology.
- Operate, identify and analyse a control system.
- Identify the fundamentals of closed-loop control technology.
- Operate a control system with a PID controller.
- Choose the correct loop tuning method.

## Requirements

The “CoDeSys V3.5” (PLC281) course.

## Duration

4 days

## Part No.

12221243



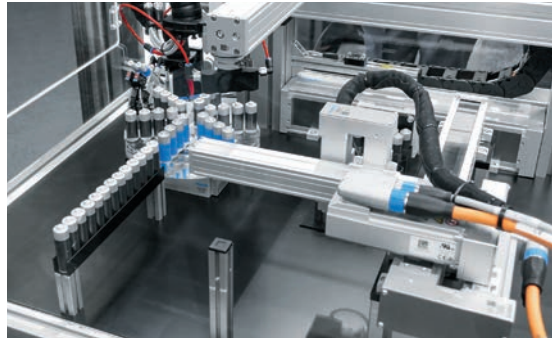
Click here for the latest schedule and pricing for this course

# Training courses: Electric Automation

## Servo and Stepper Motor Drives - Basic

### ED811

The increasing use of electrical positioning drives in the industry has led to a skills gap that can have a negative impact on productivity. If you are a user of conventional pneumatic drive technology, this course provides you with the knowledge and skills to make informed decisions on the best option for your application between electric or pneumatic actuation. You will also learn the basic concepts of electrical positioning drives.



### Target Group

Maintenance staff, design/engineers and trainers.

### Contents

- Fundamentals of electrical drives.
- Linear & rotary mechanical drives, which include tooth belt, spindle, ball screw and torque motor.
- Motors (DC motors, AC motors - synchronous & asynchronous, servo, stepper).
- Brakes for electrical drives.
- Mechanical gear units for electrical drives.
- Displacement encoders (incremental, absolute, resolvers).
- Selection criteria for electrical drives.
- Controllers.
- “Positioning drives” (software tool).

### Outcomes

After completing this course, the participant will be able to:

- Differentiate between the different types of mechanical drives (axis) and their constructions.
- Understand and know the characteristics, technical data and applications of the different types of mechanical drives (axis).
- Differentiate between the different types of electrical motors and their constructions.
- Understand and know the operation, characteristics, technical specifications and

applications of the various types of electrical motors.

- Differentiate between the different types of brakes and gear units for electrical drives, their operation and application.
- Differentiate between the different types of encoders, their operation and application.
- Select the most appropriate electrical drive (axis, motor, brake, gear unit and controller) for a given application using the “positioning drives” software tool.
- Set up, commission, power up, and configure an electrical drive system.
- Use the configuration software to set up the different parameters for speed, homing, positioning and torque control.
- Work safely with an electrical drive.

### Requirements

Basic knowledge of electricity.


Experience in operating a PC with a windows interface.

### Duration

3 days

### Part No.

12312370

 [Click here for the latest schedule and pricing for this course](#)

# Mechatronic Systems

## AUT211

This course will teach participants planning, assembling, programming, maintenance and troubleshooting of production systems at various levels of complexity. This will include innovative technology and systematic use of industrial components from different market leaders in automation.

### Target Group

Design engineers, plant engineers, programmers, maintenance staff and instructors.

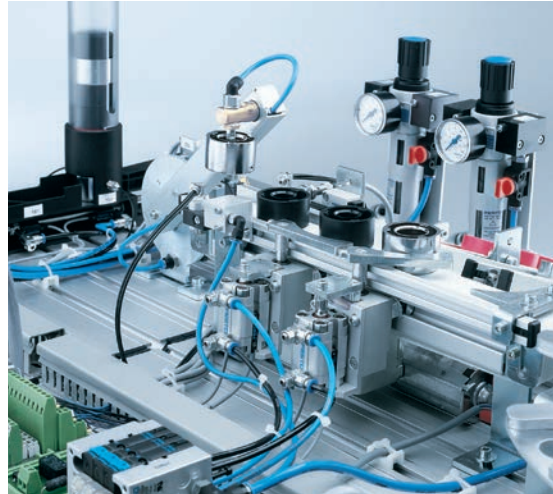
### Contents

- The basic design of a mechatronic control system, including pneumatics, mechanics, electrical drives, sensors and PLCs.
- Input and output module tasks.
- The three programming languages: Function Chart, Ladder and Statement List.
- The basic command set for a PLC.
- Creating, loading and testing simple programs.
- Utilising the status display and fault-finding.
- Signal storage.
- PLC timer utilisation.
- Archiving and de-archiving PLC programs.

### Outcomes

After completing this course, the participant will be able to:

- Identify and describe the operation of pneumatic, electro-pneumatic, electrical and PLC components as well as sensors.
- Assemble and test basic mechatronic circuits (pneumatics, electrical, and software).
- Recognise and differentiate between the types of



programming languages used in the industry.

- Download a program and commission a PLC control system.
- Troubleshoot basic mechatronic systems.

### Requirements


- We recommend a basic knowledge of PLC (Introduction to PLC Seminar) and pneumatic control technology (Pneumatics Level 1) as a minimum requirement.
- The “PLC CoDeSys” (PLC281) and “Servo and Stepper drives” (ED811) courses would be beneficial.
- Participants should also be familiar with operating a PC with a Windows interface.

### Duration

4 days

### Part No.

12312369

 [Click here for the latest schedule and pricing for this course](#)



# Robotics

## ROB111

For many years robotics have been evolving fast, providing speed, precision and quality in production processes. This course provides you with an insight into robotic hardware technology, basic programming and its function as well as, operation.



## Target Group

Maintenance staff, designers, engineers and trainers.

## Contents

- Robot arm design.
- Robot controller.
- Joint movements.
- Coordinate systems.
- Speed commands.
- Movement commands.
- Creating position lists.
- Formulate, download and testing of related sequence programs.
- Multi-tasking.
- Uploading data from the robot controller.
- Safety regarding robots.

## Outcomes

After completing this course, the participant will be able to:

- Describe the mechanics behind robotics systems.
- Describe the working principles behind the control of movement and speed.
- Explain what a coordinate system is.
- Read and write a basic robotics sequence program.
- Identify and eliminate faults using the status display.

## Requirements


The “Pneumatics level 1” (PN111) course and experience in operating a PC with a windows interface.

## Duration

3 days

## Part No.

12312371

 [Click here for the latest schedule and pricing for this course](#)

# Training courses: Process Automation and Control

## Water Treatment

### PA311

The water and wastewater sector suffers from a lack of capacity and performance, which negatively impacts the environment, public health and economic processes. Polluted domestic and industrial wastewater together with fertilisers used in agriculture lead to the pollution of lakes and can cause severe damage to eco-regions as well as river basins. Despite large-scale investments in water infrastructure, we still face challenges in terms of the operation and maintenance of water and wastewater treatment plants. This course will provide attendees with skills to treat water effectively and comply with quality regulations.



### Target Group

Technical staff and supervisors of wastewater treatment plants.

### Contents

- Water purification and wastewater treatment through:
  - Flocculation.
  - Sedimentation.
  - Chlorine dosing and disinfection.
  - Filtration of water supply.
- Operation of pumps.
- Water transport to high towers.
- Water supply to different pressure zones.
- Wastewater transport.
- Hydraulic water flow in pipes.
- Transport of solids.
- Operation of sewer systems.

### Outcomes

After completing this course, the participant will be able to:

- Influence coagulation, flocculation and sedimentation processes.
- Measure and interpret chlorine dosage.
- Understand activated sludge processes in wastewater treatment.
- Supervise and control a standard pump station system.
- Implement measures to ensure water supply to different pressure zones.
- Understand the function of valve control systems.
- Reduce water losses through pressure control.
- Regulate and circulate water flow.
- Understand the transport of solids.
- Handle the operation of sewer systems.

### Requirements

Technical knowledge.

### Duration

3 days

### Part No.

12272436



Click here for the latest schedule and pricing for this course

# Process Valves and Actuation Technology

## PA101

This course provides insight into process valve technology, such as valve/drive selection based on materials and standards. It also gives you an understanding of valve control systems and focuses on actuator selection and sizing for the correct application.

Practical exercises using industrial components and applications form an integral part of this training course.



## Target Group

Field, process and laboratory operators, process-engineers, maintenance staff, designers, engineers, trainers and consultants

## Contents

- Design and function of process valves, taking international standardisation into account.
- Physical principles and material selection related to media and process valves.
- Testing and certification requirements of process valves (such as works test certificate).
- Phenomena in fluid control like cavitation and water hammer and how to avoid it.
- Principles and selection of process valve actuation (manually, hydraulically, electrically and pneumatically).
- Reading and interpreting process valve symbols.
- Influence of international regulations on the process valve selection (AWWA, API, etc.).
- Standards in Process Automation.
- Practical control exercises and application using PLC/ actuator/valve control.

## Outcomes

- After completing this course, the participant will be able to:
- Select, assemble and test process valve installations.
- Maintain and troubleshoot process valve installations.

- Identify and describe the construction, design features and operation of process valves.
- Interpret technical specifications and data related to process valves and systems.
- Identify and explain graphical symbols for process valves.
- Perform simple calculations of pressure, flow, force and know:
  - The role of process valve actuation (manually, hydraulically, electrically and pneumatically).
  - How to prevent cavitation and water hammer damage.
  - Innovative developments and current trends in process valve automation products and their applications.
- Size the correct actuator for valves using datasheets and software tools.

## Requirements

Basic technical understanding ("Pneumatics level 1" PN111 course will be advantageous).

## Duration

4 days

## Part No.

12315988



Click here for the latest schedule and pricing for this course

# Principles of Industrial Measurement, Control, Instrumentation and Process Valves

## PA211

Process control is a unique part of the industry that deals with the measuring and controlling of variables that influence materials and equipment during the development of a product. This course describes the working principles of different instruments that are used to do the measuring and controlling during the process application processes.



## Target Group

Everyone who has to deal with instrumentation in their working environment.

## Contents

- The history of process control and instrumentation.
- Digital and analogue signals.
- Transducers and sensors.
- Basic electrical principles.
- Principles of pressure measurement.
- Principles of level measurement.
- Principles of temperature measurement.
- Principles of flow measurement.
- Components of a control valve.
- Control theory.
- Introduction to instrumentation drawings and symbols.
- The purpose of calibration.

## Outcomes

After completing this course, the participant will be able to:

- Identify and explain the working principles of process measuring instruments.
- Identify control valves used for various applications.
- Read and identify piping and instrumentation drawings.

## Requirements

Basic knowledge of electricity. The “Process Valves and Actuation Technology” (PA101) course would be beneficial.

## Duration

3 days



Click here for the latest schedule and pricing for this course

## Qualification in Industry 4.0



The professional world uses the term **'Industry 4.0'**, or Internet of Things (IoT), to discuss the fundamental change that is currently underway in the production world. The real and virtual world is growing closer together; modern information and communication technologies are merging with classic industrial processes and thus changing the different production areas.

Festo Didactic is ahead of the curve with its program for the smart factories of the future, **'Qualification 4.0'**. Recognising the need to redefine the role of humans in the production of the future and the strategy of Festo is based on three pillars: **technology, people and qualification.**

Festo has already invested heavily in equipment and resources to roll out this program since its commencement in 2018.

## Training courses: I4.0

### Introduction to Industry 4.0: Awareness training for Industry 4.0

#### AUT961

Industry 4.0 has become a keyword for industrial production, but most of the shop floor workers have only vague ideas of what Industry 4.0 means and the impact it will have on their working environments. This is why many employees are concerned or even demotivated. However, to successfully master the full implementation of Industry 4.0 in companies, a qualified and motivated workforce is essential. This training program provides comprehensive information on Industry 4.0 - creating understanding and acceptance for its implementation. As a result, companies will find it easier to introduce Industry 4.0 and maintain the motivation of the workforce.



#### Target Group

Shop floor/operators.

#### Contents

- Basic information about Industry 4.0: “What does Industry 4.0 mean?”.
- Reflection and discussion: “What impact does digitalisation have on my company and me?”.
- Blended learning: “Which best practice examples can help me in my daily business?”.
- Stimulation of self-directed learning: “How can I participate and design the changes with my knowledge and experience?”.

#### Outcomes

After completing this course, the participant will be able to:

- Understand what Industry 4.0 means, as well as familiarise themselves with its characteristics and benefits.
- Know the most important terms of Industry 4.0.
- Have an impression of the effects of digitalisation on working life.
- Know how digitalisation looks like in their private and professional life.

#### Requirements

An interest in the future of automation.

#### Duration

1 day

#### Part No.

12312374



Click here for the latest schedule and pricing for this course



# Introduction to Industry 4.0 for Management:

## Core elements and business opportunities for management

### TCM261

Industry 4.0 is an increasingly trending topic with different ideas of what it means. People working in leadership positions encounter Industry 4.0 more and must be knowledgeable about its impact. It offers numerous opportunities for companies to improve their productivity, quality and processes. However, as a first step, managers need to have a basic understanding of the core elements, technologies and how their interaction leads to Industry 4.0. Subsequently, they can develop new business models and specific strategies to implement Industry 4.0 solutions in their companies. This training targets management level and gives a general introduction to topics related to Industry 4.0. As a result, participants understand the core principles and can apply them in their respective business strategies.

### Target Group

Upper management, decision-makers, as well as executives from strategy and innovation departments.

### Contents

- Introduction to Industry 4.0.
- Difference between Industry 3.0 and 4.0.
- Overview of the core elements and technologies of Industry 4.0, e.g.
  - RFID.
  - HMI.
  - M2M communication.
  - Vertical and horizontal integration.
  - Decentralised self-controlling production.
  - Augmented reality and more.
- Social-technological developments and their consequences.
- Industry 4.0 business models and creating new business ideas.
- One day of training covers the following additional topics:
  - Bottom-up and top-down strategies to implement Industry 4.0
  - Industry 4.0 competency development
  - Industry 4.0 change management



### Outcomes

- Be familiar with the core elements and basic technologies of Industry 4.0.
- Understand how the core elements and technologies are connected, which can lead to a holistic approach to improve processes and products.
- Recognise the opportunities for developing new business models and what to take into account when implementing new strategies towards Industry 4.0.

### Requirements


An interest in the future of automation.

### Duration

1 day

### Part No.

12312376

 [Click here for the latest schedule and pricing for this course](#)

## Industry 4.0: Applications in Practice

### AUT521

Industry 4.0 allows smart-factory workers to use a series of applications that could not be implemented or that could only be implemented previously through tedious manual labour. These applications can be used for plant operation, maintenance, planning and control, as well as for tracking orders and inspecting plant operations.

During this training course, the participants will learn about ways to use these kinds of applications within a complete production process, using the Festo Didactic CP (Cyber-Physical) Lab or the CP Factory as an example. Simultaneously, the participants will establish ways to integrate typical Industry 4.0 applications into vocational training courses.

### Target Group

All employees involved in Industry 4.0 and applications or considering moving to I4.0 technology. This training course is also ideal for teachers and trainers who want to work closely with the technical contents of the CP Lab or CP Factory.

### Contents

- The concept of adaptable production: operation, visualisation, parameterisation, and routing orders to the CP Factory.
- Handling data: saving data, cloud computing data security and data mining.
- Lean production: implementing value streams using the CP Factory, line balance, working with 'breathing' buffers and batch size one production.
- Smart maintenance: OEE is the most important metric for analysing plant productivity, the concept of a usage-dependent maintenance strategy, condition monitoring and remote diagnostics.
- Energy efficiency: usage monitoring, recording consumption, localising and identifying energy losses, using increased energy consumption data to conclude, component wear as well as behaviour in the event of failure.
- Implementing the topic into your vocational training courses.
- Planning learning units using the CP Factory.



- Practical exercises.

### Outcomes

After completing this course, the participant will be able to:

- Familiarise themselves with typical application scenarios for intelligent Industry 4.0 systems.
- Understand how these application scenarios play out in the CP Factory and put them to practical use.
- Know the professions and vocational training topics for which these applications are relevant, prepare primary areas of application for their courses and plan a sample learning unit.

### Requirements

An interest in the future of automation.

### Duration

5 days

### Part No.

593516



[Click here for the latest schedule and pricing for this course](#)

# Training courses: Soft Skills

## Introduction to Lean Production and Value Stream Mapping

### LP121

Taking the form of a strategy game, this training gives you a holistic view of material and information flows within a company and sensitises you to different types of waste in processes. You learn to analyse the causes of delivery problems, low productivity, develop and implement ideas for meeting customer needs as well as improving processes. The main goal is to instil lean thinking in your company. The strategy game provides practical experience for all employees involved in lean production projects.



### Target Group

Maintenance staff, designers, engineers and trainers.

This course is ideal for participants from the same company. The course can be presented in-house or at our premises. A minimum of 12 participants are required to simulate an entire business.

### Contents

- Inventory minimisation as an essential basis for increased productivity.
- The principle of pull production control.
- Advantages compared to conventional production control methods.
- Types and functions of different pull production control methods.
- Application of methods.
- Kanban – the classic pull principle.
- SMED – Optimisation of setup processes with Single Minute Exchange of Die (SMED).
- CIP processes as part of the business game.
- Introduction to Value Stream Mapping (VSM).

### Outcomes

- Analyse the causes of delivery problems and low productivity.
- Develop and implement ideas for meeting customer requirements and process improvements.

### Requirements

Some experience in production control.

### Duration

2 days

### Part No.

561209



[Click here for the latest schedule and pricing for this course](#)

# Maintenance Strategies and Total Productive Maintenance

## LP141

This course provides service technicians with an overview of commonly used maintenance strategies compares these based on different requirements and thus provides you with a basis for making maintenance decisions to maximise availability in your own company.



## Target Group

Maintenance staff, designers, engineers, trainers and management.

## Contents

- Production systems and their influence on maintenance.
- Six typical types of machine and system losses.
- Roles and self-image in maintenance.
- Organisational structures for support.
- Comparison of maintenance strategies:
  - Event-oriented maintenance.
  - Routine maintenance.
  - Total Productive Maintenance (TPM).
  - Reliability-Centred Maintenance (RCM).
  - Risk-Based Maintenance (RBM).
- Data for recording maintenance performance.
- Examples and practical exercises.

## Outcomes

After completing this course, the participant will be able to:

- Establish sources of loss on machines and systems.
- Conduct maintenance as a service provider for production.
- Evaluate various maintenance strategies and select the appropriate one for the company or multiple devices.
- Implement the company's maintenance strategies.
- Select and collect data for recording maintenance performance.

## Requirements

Experience in maintenance.

## Duration

2 days

## Part No.

12312377



Click here for the latest schedule and pricing for this course

# Learning Systems Services with value-added

Festo Didactic Learning Systems is the world-leading provider of equipment and solutions for technical education. Our product and service portfolio offers customers holistic education solutions for all areas of technology in factory and process automation, as well as the unique Qualification 4.0 program.

## **Low-cost industry quality**

We always select products from the industry and use gadgets that are up to training standards.

## **Modular and future-proof**

We build learning systems that are 100% modular. This means you can always expand them flexibly and make your investments future-proof without reaching a dead-end.

## **Quality with no “ifs or buts”**

All products (except consumables) come with a two-year warranty. If a component stops working years down the line, you can obtain a spare part from us.

## **Didactic and design**

Ergonomics, Didactic concepts and design go hand-in-hand at Festo Didactic. Numerous international awards underline our commitment.

## **Teacher training, info events**

You can take part in free teacher training and info events. Alternatively, you can visit us at numerous trade shows around the world.

In addition, there is a large number of fee-paying special seminars available for trainers.

## **Free software, demos and sample extracts**

For example, EasyVeep is a new graphic 2D process simulation software that is available for download free of charge. It comes with numerous attractive examples of PLC training. You can sample many software products and all books on the internet using test and demo versions.



## **Online configurations**

Makes the selection and ordering process simple. For example, you can configure laboratory furniture and EduTrainer® quickly and conveniently on the internet.

## **Free of charge online dictionary**

Only Festo Didactic offers an extensive dictionary of automation in six languages, free of charge on the internet.

Free symbol library, according to DIN ISO 1219.

More teaching aids are available to be downloaded from our website.

## **Your partner, worldwide**

We speak your language and we're just around the corner – in more than 100 countries. Advice and orders can be phoned, e-mailed or done via the internet. Alternatively, give your technical consultant a call for a qualified needs analysis conducted onsite.

Please visit [www.festo.co.za](http://www.festo.co.za) for more information on Learning Systems.

# General information and bookings

## Course bookings:

Email bookings and queries to  
[didacticTaC.za@festo.com](mailto:didacticTaC.za@festo.com)

## Consultation and registration

Make sure you register early to secure your spot. The number of seats are limited, and bookings are dealt with on a “first come, first served” basis. However, if a course is over subscribed, we will make every effort to offer you a suitable alternative date. Our lines are open for telephone enquiries from Monday to Thursday, 08:00 to 17:00 and Friday, 08:00 to 15:30.

## Order confirmation

We will send a written confirmation of your course booking for your records.

## Course changes

From time to time, courses are subject to change. Pre-booked participants will be informed telephonically.

## Withdrawal

You can always specify an alternative participant if there are any changes in your company. However, we ask you to notify us of any cancellations at least five days before the beginning of the course.

Cancellation with a full refund is only granted if written notification is given five working days before the commencement of the course. Fees are not refundable for non-attendance or non-timeous cancellation.

## Fees

The course prices are exclusive of VAT at the statutory rate. Unless otherwise specified, the fees include the course fees, course documents, meals and drinks during the event.



## Liability

We shall only be liable for damage caused by deliberate or gross negligence on the part of our employees, any other liability is excluded.

## Copyright

Reproduction of course documents for distribution, sale or communication is not permitted. The software used for exercises during the courses may not be copied or removed from the course location. Participants are not allowed to transfer their software.

## Certification

On successful completion of the course (theory and practical), candidates receive an internationally recognised Festo certificate.



# Training centres and contact details



## Fully equipped training centre locations

- Johannesburg
- Cape Town
- Durban
- Gqeberha
- East London



## Festo South Africa Head Office

Festo Industrial Workforce Development  
18-26 Electron Avenue  
Isando, Kempton Park,  
Ekurhuleni,  
Gauteng,  
1600



## Options for in-house courses – We come to you

- Courses can be facilitated in your training facility – we bring the equipment.
- Courses are conducted in our mobile classroom (Eduvan).



**Tel:** 011 971 5626 / 5500 (Head Office)

**Email:** [didacticTaC.za@festo.com](mailto:didacticTaC.za@festo.com)

For more information, please visit our website on [www.festo.co.za](http://www.festo.co.za).



## Course times

- Face-to-face: 08:30 - 16:30
- Webinar: 08:00 - 10:00



## Consulting:

Our customer advisors will be pleased to assist you with any questions regarding content, location, dates and special courses. Call Festo Didactic on 011 971 5626 / 5500





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