Industrial Data Xchange

Competence Centre

THE IDX ACADEMY

CORPORATE TRAINING

Establish, Maintain and Leverage Data for Business Benefit

2024

Industrial Communications Training Brochure

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We can organise customised training sessions for our products or conduct training at your site. Please reach out to us via email at academy@idx.co.za to discuss your requirements.

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Industrial Data Xchange
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Developing your skills one step at a time

About The IDX Academy

Established in 2001, the IDX Academy offers industrial Information and Communications Technology (ICT) training.

The IDX Academy develops and teaches accredited courses, which combine both the theoretical and practical skills required, to efficiently manage any industrial network.

In 2004, the Academy received its certification from PROFIBUS International (PI) becoming the first and only Certified PROFIBUS International Competence Centre (PICC) in Africa.

With the emergence of PROFINET, the IDX Academy extended its portfolio and became a Certified PROFINET International Competence Centre (PICC) in 2011.

The IDX Academy is Africas's first, and still the only, PICC with the scale and portfolio to deliver comprehensive, integrated, and industry-leading industrial training solutions.

Excellence since 2001

We have gained valuable experience over the last two decades and we are excited to share our knowledge with your team.

Certification

Receive an internationally accredited certificate upon the successful completion of our theoretical and practical examinations.

CPD Points

Earn CPD points on selected Fieldbus Courses to develop your ICT skills, knowledge and enhance your experience.

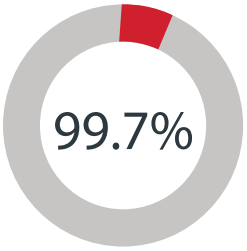
Take control of your infrastructure

Why train your employees?

Training is essential for maintaining critical infrastructure to ensure that equipment operates at peak performance, and within a safe environment.

Limited budgets, time constraints and a changing workforce can make it challenging to effectively deploy training programmes across multiple sites.

IDX's technical training solutions can help simplify the process so that you cost-effectively achieve operational excellence.



Success Rate

99.7% of our students conveyed that the content consumed during our training is relevant to their average daily job tasks.

Minimise downtime and improve business connectivity

- Increase efficiencies in processes
- Reduce wastage
- Adopt new technologies
- Empower employees
- Improve cost of ownership
- Uniformity of work processes
- Boost productivity
- Expand job satisfaction levels

"I gained a lot of knowledge that I can use in future with fault finding, commissioning, etc."
- Arend Hofmeyer

"It provided insight into the inner workings of Profibus and will provide the needed confidence to use Profitrace more efficiently."
- Nico Oberholzer

"The training practicals were very informative. I had never used TIA Portal but this course gave me a good introduction to it."
- Prince Muzi Manana

Leverage training and technology

Convince your employer to pay for your training

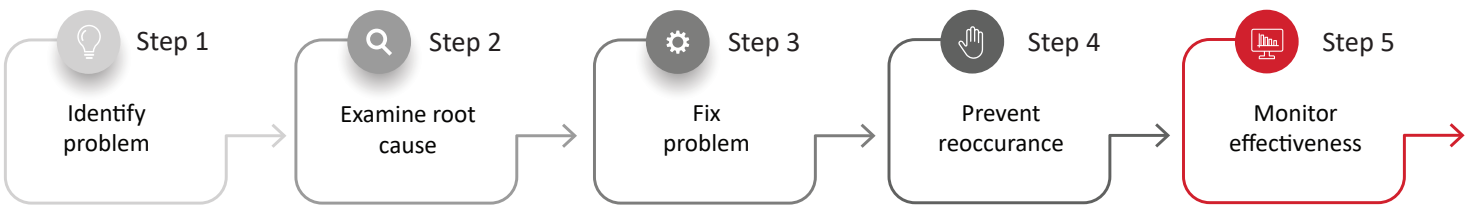
Do you feel the need to adapt to new developments in your field? Do you need to boost your skills and increase your technical knowledge but do not know how to ask your employer to pay for your training? You may be surprised to discover that your employer is more inclined to support your training than you are expecting.

Here are some motivation points that you may use to convince your employer to pay for your technical training:

- Identify and troubleshoot problems faster
- Accept more responsibility
- Build leadership ability
- Better company image
- More efficient at handling tasks
- Pass on new skills to the team
- Increase job satisfaction
- Tax-deductible

Enabling productivity through active learning

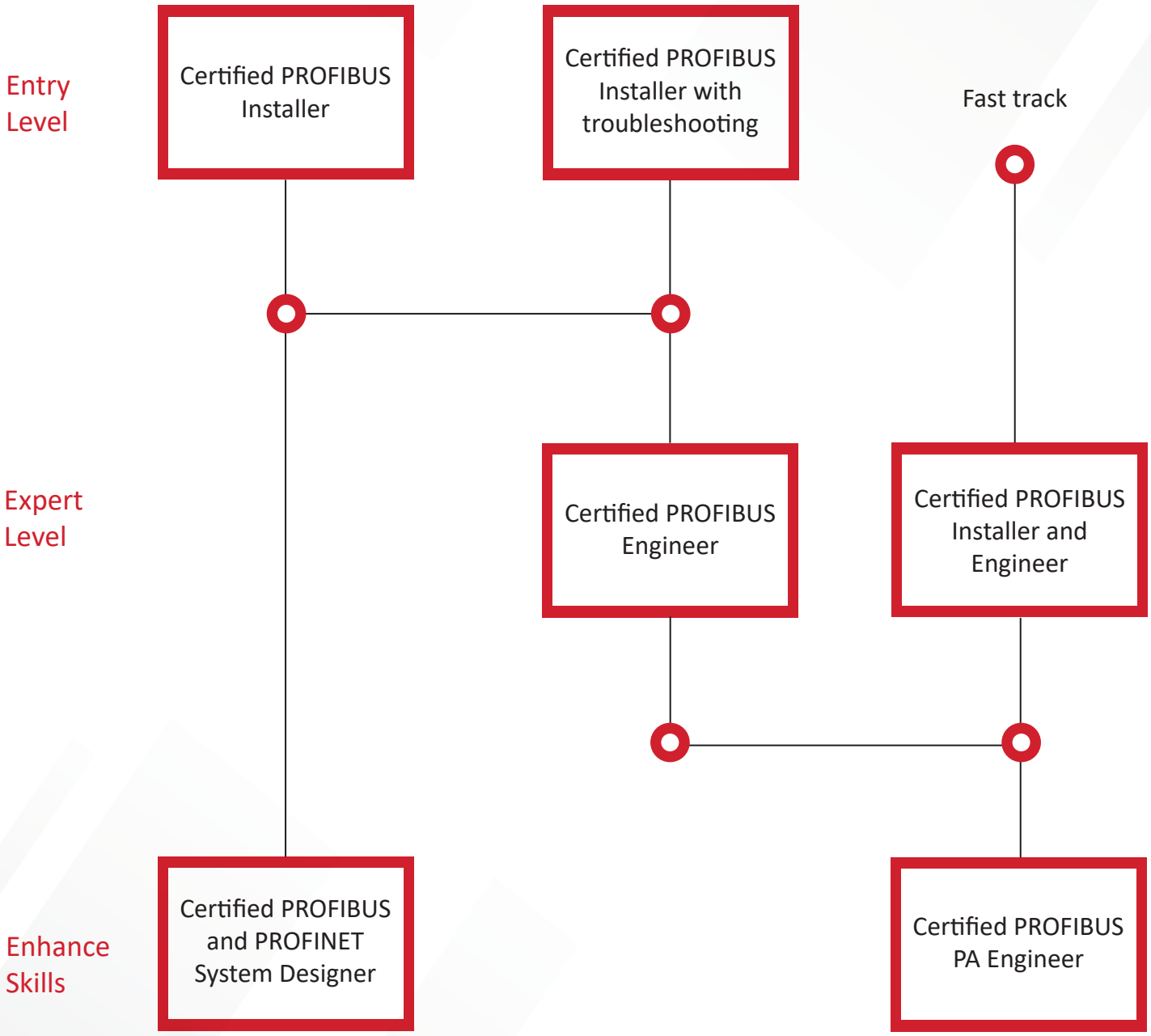
After your training is complete, we want you to leave with a better understanding of the topic in which you aim to progress in. You will be better equipped to articulate new strategies and make better decisions in your workplace.



Become a PROFIBUS Expert

PROFIBUS plays an essential role in industrial automation. In most cases, certified employees and contractors should be the only ones who are truly equipped to carry out PROFIBUS network installations, maintenance and troubleshooting.

Through the valuable Certified PROFIBUS status, companies and their employees can distinguish themselves from competitors who also make use of this technology.



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Certified PROFIBUS Installer with troubleshooting

This course focuses on providing attendees with the knowledge required to ensure that PROFIBUS network installations are performed to the highest of standards while avoiding common installation errors.

This is an excellent course to ensure that your employees are trained to install, maintain and troubleshoot a PROFIBUS faultless network.

Course Information

This course provides an overview of the PROFIBUS network operation and its characteristics, covering the theoretical, practical and troubleshooting elements of PROFIBUS DP and PA installation.

Using demonstration boards, which integrate a wide range of standard industrial devices, the student learns the basics of topology, wiring an active network, and troubleshooting installation faults using diagnostic tools.

The first day of training covers the basics of PROFIBUS DP and PA installation and operational requirements which are fundamental to the understanding of what may go wrong and how to go about fixing it.

The second day delves into the potential PROFIBUS problems (specifically on DP), the various diagnostic tools and the strategies to go about troubleshooting.

Who should attend

Any individual that installs or provides technical support to PROFIBUS networks.

Prerequisites

A technical qualification, experience working with digital communication systems and good literacy in English.

Duration

This course will be completed in 2 days.

CPD Points

Earn 1 CPD point upon successful completion of this course.

Examination

After successfully completing a theoretical and practical examination, students are awarded an internationally recognised certificate.

Certified PROFIBUS Engineer

An intensive hands-on course aimed at producing fully competent PROFIBUS engineers. Students that attend this course gain an in-depth understanding of the technology, and what goes into implementing and maintaining well-structured and reliable PROFIBUS networks.

PROFIBUS Certified Engineers are well equipped to troubleshoot technical difficulties that may accompany a PROFIBUS installation.

Course Information

The course provides an in-depth view of the PROFIBUS network operation and its characteristics, covering the theoretical, practical and common pitfalls of PROFIBUS DP and PA network installation.

Using demonstration boards, which integrate a wide range of standard industrial devices, the student learns the basics of designing and wiring an active network, an in-depth analysis of the protocol and how to use diagnostic tools to detect and fix bus faults and packet analysers to identify more complex configuration errors.

The many ways to tailor a PROFIBUS network and device configuration using GSD & EDD files as well as DTM/FDT under various master configurations are examined.

PROFIBUS PA and its associated components are lightly introduced (see our PA course for more in-depth training on this subject).

Who should attend

Application engineers, system integrators, technical support/maintenance staff, project leaders, installers, suppliers.

Prerequisites

A Certified PROFIBUS Installer qualification or students must be booked for the Certified PROFIBUS Installer course on the day preceding the Certified PROFIBUS Engineer course.

Duration

This course will be completed in 4.5 days.

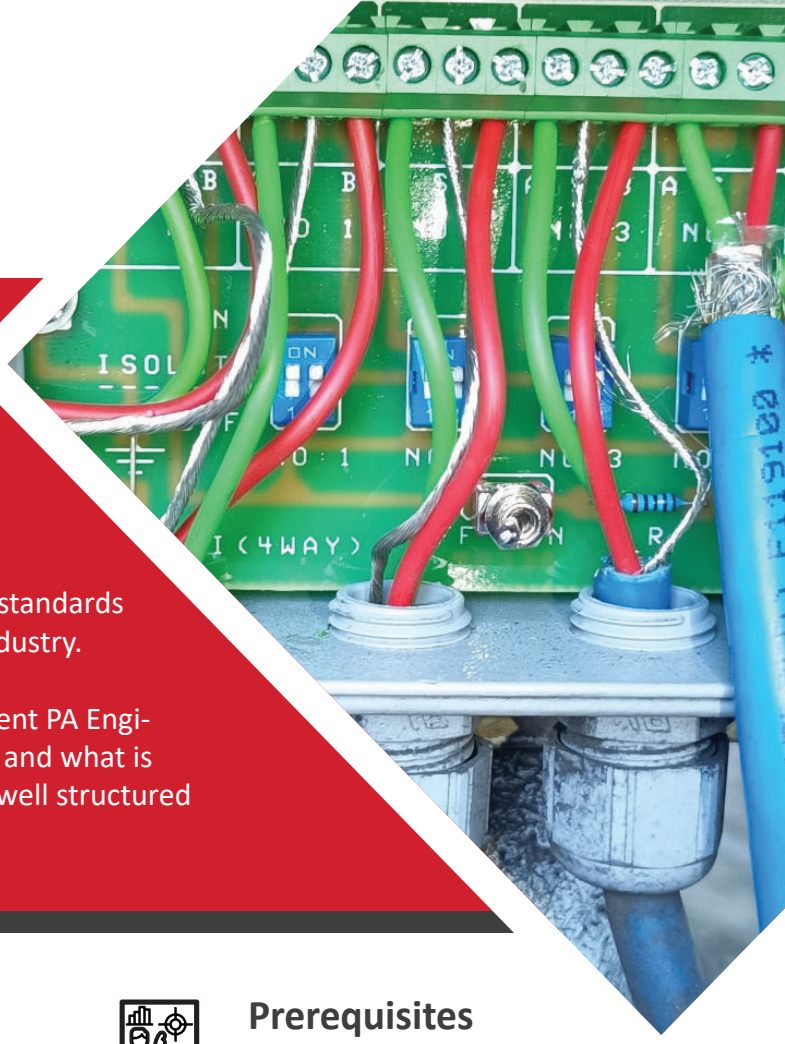
CPD Points

Earn 4 CPD points upon successful completion of this course.

Examination

After successfully completing a theoretical and practical examination, students are awarded an internationally recognised certificate.

Certified PROFIBUS PA Engineer



Process Automation (PA) is an addition to the PROFIBUS standards family that is specifically geared for use in the Process Industry.

This hands-on course is aimed at producing fully competent PA Engineers with an in-depth understanding of the technology, and what is required for designing, implementing and maintaining a well structured and reliable PROFIBUS PA network.

Course Information

This course provides an in-depth view of PROFIBUS PA fundamentals and its characteristics, with a special focus on PA network design details.

Using demonstration boards, which integrate a wide range of standard PA devices, the student is taken through the basics of wiring an active network, analysis of the protocol changes for PA, PA network design and device selection, the application of EDD/FDT technologies, and PA application in hazardous environments.

The lessons build upon each other in a way that the depth of the course steadily intensifies while core topics are addressed.

At the end of the course, you will be able to design and commission a PROFIBUS PA network. You will understand the benefits of the technology and know the procedure for troubleshooting.

Who should attend

System programmers, control and instrumentation engineers, design and planning engineers, service and maintenance staff, installers, project managers.

Prerequisites

A Certified PROFIBUS Engineer qualification is required to attend this course.

Duration

This course will be completed in 3 days.

CPD Points

Earn 3 CPD points upon successful completion of this course.

Examination

After successfully completing a theoretical and practical examination, students are awarded an internationally recognised certificate.

Certified PROFIBUS and PROFINET System Designer

This course provides a top-down approach to designing modern PROFIBUS and PROFINET automation and control systems. Learn about the latest and most important developments, including new devices which provide permanent monitoring of networks and notification in the case of degradation or failure.

Course Information

The aim of this course is to cover the design of modern control systems that can be maintained and which minimise the impact of control systems and network failures that will inevitably occur during the lifetime of a plant.

Some of the topics that are discussed in this course include system design requirements, network layout and design, profiles, hazardous areas, high availability systems and redundancy, modern solutions for network monitoring and safety-related systems.

Minimise the footprint of failures in terms of restricting the extent of the effects of failures and also the time to locate and repair faults.

Case studies are utilised from a wide range of industries including manufacturing, process plant water treatment, materials handling and automated part sorting storage and retrieval.

Who should attend

Application engineers, system integrators, technical support/maintenance staff, project leaders, installers, suppliers, automation and control systems staff.

Prerequisites

A Certified PROFIBUS Installer qualification or students must be booked for the Certified PROFIBUS Installer course on the day preceding Certified PROFIBUS System Designer.

Duration

This course will be completed in 4 days.

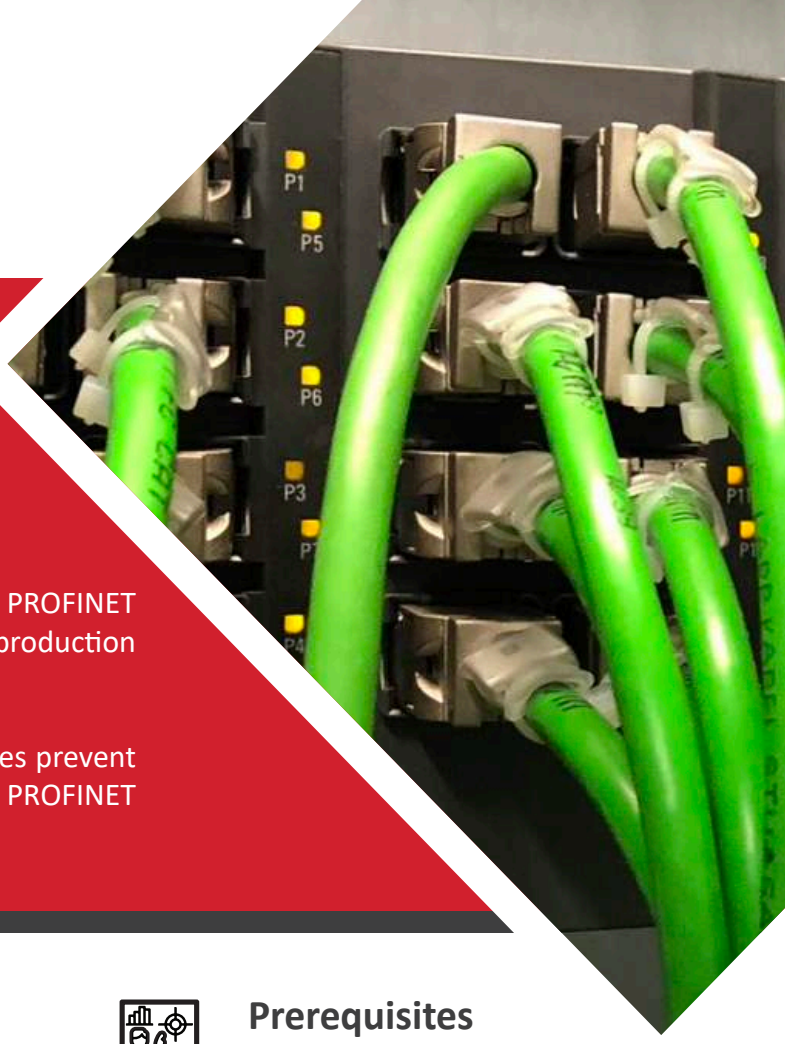
CPD Points

Earn 3 CPD points upon successful completion of this course.

Examination

After successfully completing a theoretical and practical examination, students are awarded an internationally recognised certificate.

Certified PROFINET Engineer



This high tech course provides detailed knowledge on PROFINET and the advantages it offers your automation and production processes.

The taught knowledge of this training will help employees prevent mistakes in planning, installing, and troubleshooting PROFINET networks.

Course Information

This course provides an in-depth view of the PROFINET network. Students learn how to design, install, commission, and troubleshoot a PROFINET network.

Using demonstration boards, which integrate a wide range of standard industrial devices, some of the topics discussed include Ethernet basics, network components, time scheduling, and sequences.

The course gets right down to the protocol/packet level and includes information on the bus parameters.

Students also learn about PROFINET monitoring, diagnostics and troubleshooting using tools such as Osiris and GSDML file viewers.

At the end of this course, you will be able to confidently assess and troubleshoot the necessary PROFINET requirements for your industrial infrastructure.

Who should attend

Any individual that installs or provides technical support to PROFINET networks.

Prerequisites

A technical qualification, experience working with digital communication systems and good literacy in English.

Duration

This course will be completed in 3 days.

CPD Points

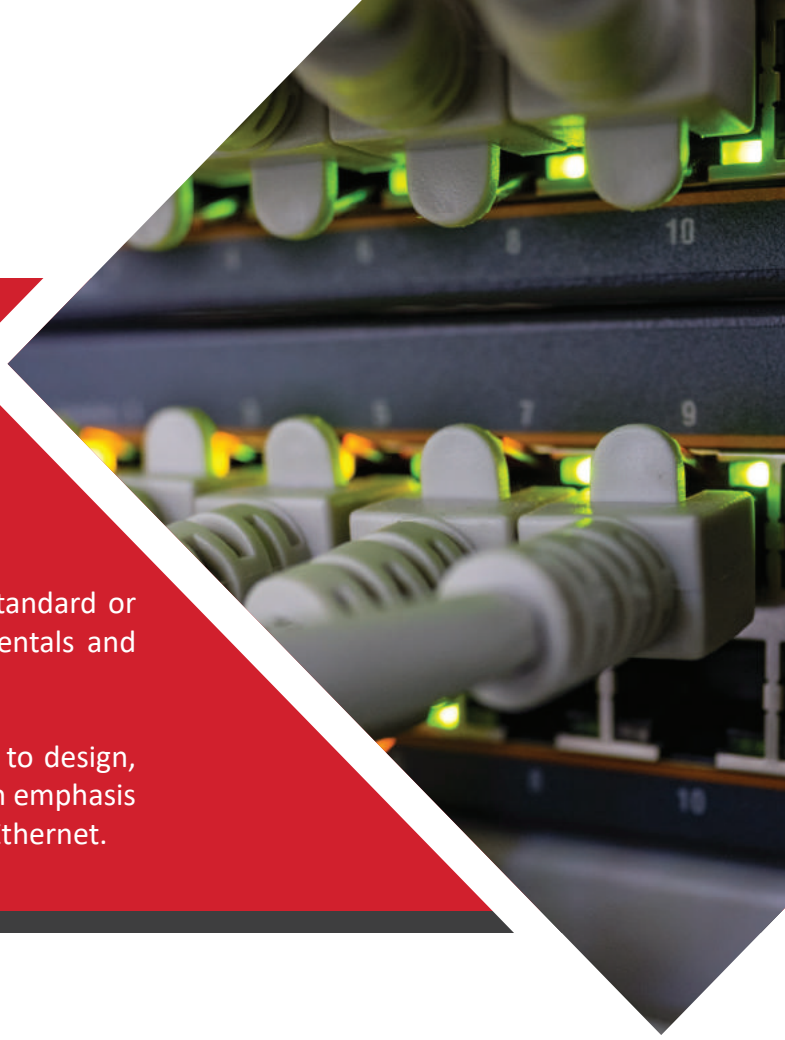
Earn 3 CPD points upon successful completion of this course.

Examination

After successfully completing a theoretical and practical examination, students are awarded an internationally recognised certificate.

INDUSTRIAL ETHERNET

Introduction to Industrial Ethernet



An essential course for anyone starting to work with standard or Industrial Ethernet. This course addresses the fundamentals and best practices in deploying Industrial Ethernet networks.

The course provides the required basics for technicians to design, implement and maintain their Ethernet networks with an emphasis on the unique needs and challenges faced by Industrial Ethernet.

Course Information

This course is intended to provide an introduction to Industrial Ethernet, as well as its concepts and terminologies. Students learn the fundamentals and deployment objectives of the world's most widely used LAN communication protocol.

The course provides a basic understanding of the differences between Ethernet-based bus systems and the pros and cons between protocols and technologies.

It covers an overview of Industrial Ethernet digital systems risks, requirements and considerations. We take a look at the infrastructure, design and components required within a functional network installation.

A detailed discussion is included around tools, hardware and software components as well as the procedures required for effectively troubleshooting, analysing and health checking Industrial Ethernet systems.

Who should attend

Installers, network engineers, project planners, industrial engineers, maintenance workers, plant employees.

Prerequisites

A technical qualification, experience working with digital communication systems and good literacy in English.

Duration

This course will be completed in 1 day.

Examination

After successfully completing a theoretical and practical examination, students are awarded a certificate.

Fundamentals of Modbus

The Modbus protocol is the oldest and still by far the most popular automation protocol in the field of process automation. This course will teach you the theory behind the Modbus Protocol as well as RS485, RS232 and RS422 networking.

Once you have completed this course, you will be able to connect, integrate and troubleshoot devices on a MODBUS network.

Course Information

The course begins with an introduction to Modbus. We see where Modbus fits in as a digital communications system and what its advantages are over traditional analogue systems.

As Modbus can be implemented over multiple transmission mediums, we learn the physics behind its implementation over the copper wire medium in terms of electromagnetic interference, electrostatic interference, earthing, reflections, signal attenuation, terminations and repeaters.

Students learn about wireless and remote monitoring solutions, the master/slave protocol, as well RS485, RS232 and RS422. The Modbus protocol versions, RTU, ASCII and TCP are discussed in detail.

Memory access, data storage and types, endianness, bit and byte significance and bit masking are discussed.

Who should attend

Installers, network engineers, project planners, industrial engineers, maintenance workers, plant employees.

Prerequisites

A technical qualification, experience working with digital communication systems and good literacy in English.

Duration

This course will be completed in 1 day.

CPD Points

Earn 1 CPD point upon successful completion of this course.

Examination

After successfully completing a theoretical and practical examination, students are awarded a certificate.

Actuator Sensor-Interface

Fundamentals of Actuator Sensor-Interface (AS-i)

Actuator Sensor-Interface (AS-i), has become a widely used Field-bus throughout the world on the lowest field IO level. This course covers the introduction, features, benefits and limitations of AS-i as well as some safety considerations.

Once you have completed this course, you will be able to connect, integrate and troubleshoot devices on an AS-i network.

Course Information

Students learn about the various topology options, network structures and the incorporation of AS-i into higher-level network structures, such as PROFIBUS.

The course covers power and data transmission, transmission phases for controlling data exchange, start-up procedures and addressing, and data handling throughput in terms of speed, delay and jitter.

The interoperability of different devices from different vendors are discussed along with the environments in which AS-i is implemented. Learn about the interaction between masters and slaves.

Using demonstration boards, students get the opportunity to build a small AS-i network, giving them hands-on experience on installing AS-i devices, and integrating sensors into the system.

Who should attend

Installers, network engineers, project planners, industrial engineers, maintenance workers, plant employees.

Prerequisites

A technical qualification, experience working with digital communication systems and good literacy in English.

Duration

This course will be completed in 1 day.

CPD Points

Earn 1 CPD point upon successful completion of this course.

Examination

After successfully completing a theoretical and practical examination, students are awarded a certificate.

Training Schedule for 2024

Course	Date	Duration
Certified PROFIBUS Installer with troubleshooting	28 Feb 2024	2 days
Certified PROFIBUS Engineer (incl. Certified PROFIBUS Installer)	04 Mar 2024	5 days
Certified PROFIBUS Installer with troubleshooting	13 Mar 2024	2 days
Certified PROFINET Engineer	10 Apr 2024	3 days
Certified PROFIBUS Installer with troubleshooting	17 Apr 2024	2 days
Certified PROFIBUS and PROFINET System Designer (incl. Certified PROFIBUS Installer)	23 Apr 2024	4 days
Certified PROFIBUS Installer with troubleshooting	08 May 2024	2 days
Certified PROFIBUS Engineer (incl. Certified PROFIBUS Installer)	20 May 2024	5 days
Certified PROFINET Engineer	05 Jun 2024	3 days
Certified PROFIBUS Installer with troubleshooting	19 Jun 2024	2 days
Certified PROFIBUS PA Engineer	26 Jun 2024	3 days
Certified PROFIBUS Engineer (incl. Certified PROFIBUS Installer)	08 Jul 2024	5 days
Certified PROFIBUS and PROFINET System Designer (incl. Certified PROFIBUS Installer)	23 Jul 2024	4 days
Certified PROFIBUS Installer with troubleshooting	07 Aug 2024	2 days
Certified PROFINET Engineer	21 Aug 2024	3 days
Certified PROFIBUS Installer with troubleshooting	04 Sep 2024	2 days
Certified PROFIBUS Engineer (incl. Certified PROFIBUS Installer)	16 Sep 2024	5 days
Certified PROFIBUS PA Engineer	25 Sep 2024	3 days
Certified PROFIBUS Installer with troubleshooting	02 Oct 2024	2 days
Certified PROFINET Engineer	16 Oct 2024	3 days
Certified PROFIBUS Installer with troubleshooting	13 Nov 2024	2 days
Certified PROFIBUS Engineer (incl. Certified PROFIBUS Installer)	18 Nov 2024	5 days
Certified PROFINET Engineer	04 Dec 2024	3 days

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Connectivity for business benefit

Get in touch with us

At IDX, we strive to contribute to the growth and profitability of your business by providing the appropriate tools and training necessary for job excellence and career advancement.

We have been working with businesses like yours since 2001, and draw upon our vast experience spanning across industries, business functions, and culture to deliver a value-adding experience for your most valuable assets - your people.

Sweat your assets by empowering your people!

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