
Course Outline: Certified PROFINET Engineer

Process Field Network (PROFINET) is a leading industrial Ethernet technology that enables high-speed, real-time communication and seamless integration between devices in automation systems. It connects industrial devices, such as sensors, actuators, and controllers, over Ethernet, offering reliable, scalable, and flexible solutions for demanding industrial environments.

Course Information

The Certified PROFINET Engineer Course is a comprehensive three-day, hands-on training program designed to equip individuals with the skills to design, install, commission, and troubleshoot a PROFINET network.

This course provides an in-depth view of the PROFINET network, focusing on installation guidelines, Ethernet basics, and the infrastructure required for a successful network setup. Participants gain practical experience using demonstration boards that simulate real-world industrial environments, helping them understand Ethernet basics, network components, time scheduling and sequences. Students also learn to work with key technologies like IWLAN, SNMP, and LLDP, while gaining a solid understanding of the PROFINET protocol, message structure, and network components.

In addition, the course covers troubleshooting techniques, network failure identification, and the use of diagnostic tools and remote monitoring solutions. Advanced sessions on PROFINET isochronous real-time systems and GSD files equip attendees with the knowledge to optimise network performance. The course concludes with practical and theoretical examinations, ensuring attendees can effectively maintain and troubleshoot PROFINET networks.

Course Outline

Day 1

- Introduction
- PROFINET installation guidelines
- Practical 1
- Introduction to Ethernet
- Practical 2
- Ethernet basics
- PROFINET infrastructure
- Practical 3

Day 2

- IWLAN (IEEE 802.11)
- Simple Network Management Protocol (SNMP)
- LLDP (IEEE 802.1 AB)
- PROFINET protocol
- Identifying and correcting network failures
- Diagnostic tools and remote monitoring solutions

Day 3

- Message structure
- Practical 4
- PROFINET isochronous real-time
- GSD Files
- Practical 5
- Theory examination
- Practical examination

Prerequisites

This course covers advanced content. Participants should have a technical qualification, experience working with digital communication systems, and strong proficiency in English.

Who Should Attend This Course

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

Certification

On the final day of the course, attendees must demonstrate their proficiency by completing an open-book multiple-choice theory test and a practical assessment. Candidates who pass both tests will be registered with PROFIBUS and PROFINET International (PI) as Certified PROFIBUS Engineers. Those who do not pass will have the opportunity to schedule one additional attempt with the IDX Academy.

CPD Points

Students can earn three ECSA-accredited CPD points for this course.

Venue

All courses are conducted at the IDX Academy in Fourways, Johannesburg, South Africa. Onsite training is available upon request, in collaboration with your Safety, Health, Environment, and Quality (SHEQ) team to ensure safe interactions.

Capacity

Given the technical nature of the course, training groups are capped at a maximum of eight participants to ensure a high pass rate.

Course Date and Booking

Click [here](#) to view the training schedule. To book, complete the [application form](#) and email it to academy@idx.co.za. For additional inquiries, contact +27 (11) 548 9960 or visit <https://www.idx.co.za>.