

Certified PROFINET Network Engineering & Installer Course (5 days)

How do I design a PROFINET network? How does it work? How do I install it? How do I configure it? How would I troubleshoot it? If you are asking yourself these questions, then this course is for you!

This is an intense and detailed course on how to design, install, commission, and troubleshoot a PROFINET network. Besides discussing practical installation issues, it also gets right down to the protocol/packet level and includes detailed information on the bus parameters. The students will have many opportunities to work with the equipment as with over 20 labs over the week.

Both the course and the instructor have been certified by PROFIBUS PROFINET International which guarantees high-quality training. The course ends with both a written and practical test. Successful students will have their names listed on the PROFINET website as a Certified PROFINET Network Engineer and a Certified PROFINET Installer.

A short introduction and hands-on lab on two other Industrial Ethernet protocols are also included.

Upon completion of this course, the student shall be able to:

- Design a PROFINET network
- Install and set up a PROFINET network
- Set up a basic switch and router
- Decode a PROFINET packet and understand how the protocol works
- Understand the basic bus parameters
- Troubleshoot common and uncommon problems

Theory Topics Covered:

- Introduction to Industrial Ethernet
- OSI 7-layer model
- Ethernet Protocols
- Hub, switches, routers and firewalls
- Redundancy
- Network design
- Security
- Physical layer and installation
- Device model and Profiles
- Setting up a PROFINET project
- IRT
- PROFINET Theory
- Acyclic communications
- Diagnostic model
- Fault finding strategies
- Measurement tools (Wireshark)
- Introduction to other Industrial Ethernet Protocols

Hands-on Exercises:

- IP addresses and ping
- Wiring lab
- Setting up a switch
- Configuring a PROFINET network
- Diagnostics lab
- Using Wireshark and other troubleshooting tools

Class Day Information:

- Attendees will receive all course notes, writing materials and a certificate (Network and Installer). The certificates will depend on passing the final test.
- Attendees will receive a digital copy of 'Catching the process Fieldbus – An introduction to PROFIBUS and PROFINET' co-written by the instructor James Powell
- Attendees will receive a hard copy of Industrial communication with PROFINET by Manfred Popp
- Class size is limited to a maximum of 10 people to ensure maximum exposure to the training equipment

Training Equipment:

- IO-Controller includes Codesys software running on a Raspberry PI and Siemens S7-1200 PLC. The Codesys software is using IEC 61131-3 standard programming which makes it perfect for teaching general concepts without getting confused with proprietary software.
- IO-Devices include Helmholz TB-20 IO rack, Wago IO rack, Helmholz 4 port managed switch
- Router is a WALL IE router by Helmholz
- Permanent monitoring system is Atlas by PROCENTEC
- IO-Supervisor/Monitor is Netilities by PROCENTEC
- Protocol Analyzer is Wireshark
- Ethernet cable tester

Instructor:

Your instructor for this course is James Powell, P.Eng., co-author of 'Catching the process Fieldbus – An introduction to PROFIBUS and PROFINET' (published by PROFIBUS and PROFINET International). James has over 20 years of experience with PROFIBUS and over 25 years with Industrial Ethernet and has presented technical training in China, Chile, Argentina, Ecuador, USA, Canada, UK, Germany and the Netherlands. He is a certified PROFIBUS DP, PA and PROFINET network engineer.

Scheduled Classes:

November 2-6, 2020 - Peterborough, Ontario

April 12-16, 2021 – Peterborough, Ontario

On-site classes are also available on demand.

JCOM Automation is a member of PROFIBUS PROFINET North America and is a certified PROFIBUS and PROFINET training center and Competence Center.

For more information, please contact JCOM Automation at jamesp@jcomautomation.ca or +1-705-868-8745.