EtherNet/IP Troubleshooting and Maintenance course

Learn the skills to quickly find, analyze, and isolate EtherNet/IP network problems. This course will provide you with the knowledge and skills you need to run the communication cables, wire the connectors, test the cables, and setup basic equipment. You will also learn how to minimize the impact of EMC on the network. Get hands-on experience with the latest EtherNet/IP troubleshooting tools including; Wireshark and the permanent network monitor Atlas which includes the EtherNet/IP commissioning wizard.

Upon completion of this course, the student shall be able to:
- Add devices to an existing EtherNet/IP network
- Understand how the network functions
- Install and setup an EtherNet/IP network
- Use both implicit and explicit messaging
- Troubleshoot common and uncommon problems

Course outline
- Introduction to industrial Ethernet
- OSI 7-layer model
- CIP
- Objects, attributes, and instances
- Ethernet protocols
- Hubs, switches, routers, and firewalls
- Device diagnostics
- Basic network design
- Physical layer and installation
- Setting up an EtherNet/IP project (generic and Allen-Bradley)
- Diagnostic model
- Fault finding strategies
- Measurement tools

Hands-on Exercises:
- IP addresses and ping
- Wiring lab
- Setting up a router
- Configuring an EtherNet/IP network
- Commissioning an EtherNet/IP network
- Diagnostics lab
- Using Wireshark and other troubleshooting tools

Training Equipment:
- IO-Scanner (Codesys software running on a Raspberry Pi)
- IO-Adaptors include Helmholz TB-20 IO rack and Turck Wago IO block
- PROCENTEC Atlas permanent monitoring system
- Wireshark Protocol Analyzer
- Ethermet cable tester
- AB CompactLogix PLC with an EtherNet IO-scanner

Class Day Information
- Attendees must bring a laptop or tablet which can read a USB drive.
- Attendees will receive a support USB drive with an electronic version of the materials plus key PI documents.
- Students will receive a certificate of attendance and 15 verifiable professional development hours
- Students will receive a copy of *'The Everyman's Guide to EtherNet/IP'* by the John S. Rinaldi
- Class size is limited to a maximum of 8 students (2 students per training rack).

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Course duration

This course is delivered over two days. Each day requires 7.5 hours of instruction which includes two 15 minute breaks and one 30 minute lunch break.

Scheduled Classes
- Please check our website for scheduled classes or contact us to arrange a training date
- On-site classes are available upon request

Course code and Prerequisites
- Course code: T-ETHERNET-02
- There are no prerequisites for this course.

Instructor

James Powell, P.Eng., is the principal engineer and owner of JCOM Automation Inc. He has written many articles and two books: *HART Communication Protocol – a practical guide,* and *Catching the process fieldbus – An introduction to PROFIBUS and PROFINET*. James is a certified PROFIBUS DP, PA, and PROFINET network engineer, PROFIBUS System Design Engineer and has over 20 years of experience with PROFIBUS, PROFINET, EtherNet/IP, Modbus, and HART installations.

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

To book this course for yourself or your team, please contact JCOM Automation at admin@jcomautomation.ca or +1-705-868-8745.