

Manchester Metropolitan University Automation Systems Centre Certified Open PLC Engineer Course



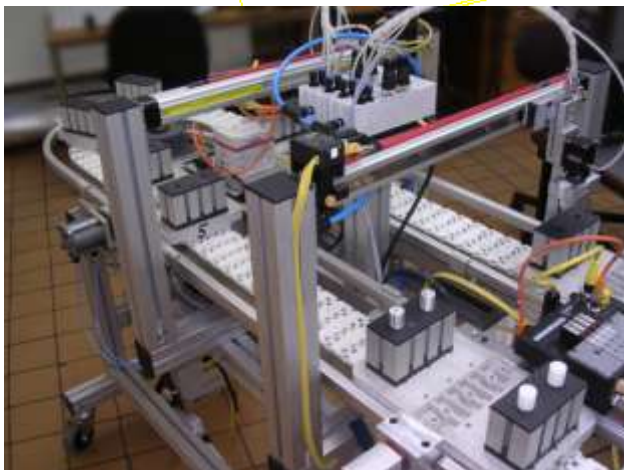
Manufacturer-Independent Control System Programming using the International Standard IEC 61131-3

Why should I attend this course?

Until recently, the manufacturers of Programmable Logic Controllers (PLCs) developed their own programming languages. This situation has in the past tended to lock users to a particular manufacturer because of existing software, maintenance and training etc. The international standard, IEC 61131-3, published in 1992, provides the open standard for programming of a wide range of industrial control systems in a universal, vendor-independent way. The majority of PLC systems are now programmed using IEC 61131-3 languages.

Just another PLC programming language?

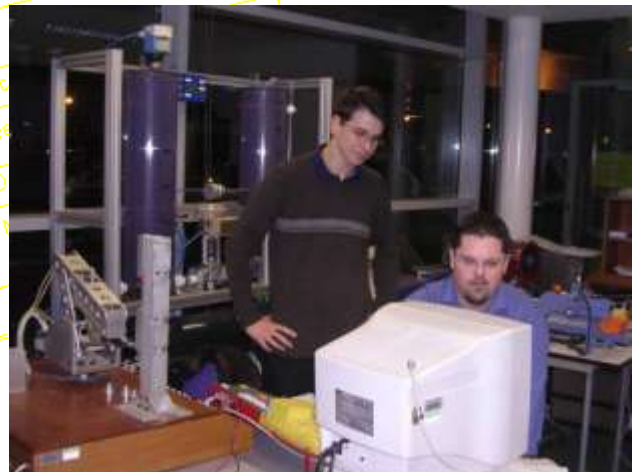
Definitely not! The IEC61131-3 standard supports modern "software engineering" methods that mean improved programs, easier maintenance and fault finding, reusable and transportable code. The result is a significant reduction in the number of programming errors and more reliable and maintainable control system software. Many end-users now require that their control systems be programmed using IEC 61131-3.



IEC 61131-3 incorporates five different approaches to programming control systems, each as a simple language aimed at a particular type of problem or application area. The languages can be easily combined in a rich variety of ways to produce good-quality readable code. These simplify and standardise the programming across different manufacturers and different types of control system (for example: programmable drives, intelligent sensors, SCADA packages, process controllers etc).

Who should attend?

The 2½-day Certified Open-PLC Engineer Course is aimed at Engineers and Technicians who want to gain an internationally recognised qualification in open-PLC programming using IEC 61131-3. Some prior experience with programmable control systems is beneficial. However, those with no experience can take the 2-day Basic PLC Programmer course before hand. We always run these two courses together, so those who want to get up to speed quickly can take both courses in one week.



What does the course cover?

The course uses a very practical approach, with about half the time dedicated to hand-on activities with "real controllers" and "real processes" to control. Each pair of students has their own PLC and PC-based programming environment. The course covers all five programming languages that are defined in the standard, as well as common elements and software transferability issues.

The teaching adopts an applications-oriented approach throughout. Realistic industrial rigs are used for teaching and practical exercises. These include conveyor systems, pick and place robots, lift systems, process control and batch processing

Certification Tests

The course includes a multiple-choice written test and a practical programming test. These tests ensure that the attendees understand the material and are competent in applying IEC 61131-3. We try to make sure that everyone is competent at programming studying many different examples,

extensive case studies and lots of hands-on practice. The course includes a tutorial session and practice programming to help prepare for the tests.

- Top down programming using the SFC language
- Practical case studies - Batch mixing process, Three storey lift control

What is included?

- A full set of course notes including reference documents and worked application examples
- Lunch and all refreshments throughout each day.
- Attendance certificate/Certified Open-PLC Engineer certificate.

Day 2

- Algorithmic programming using the ST language
- Common elements
- Case study - Electrochemical treatment plant control,
- Plant simulation – an approach to program development
- Practical sessions – Real problems to solve.
- The IL language

Course outline

Two and a half full days starting at 9:00 am and finishing at 5:30 pm each day, except for the last day which finishes at 1:00 pm.

Day 3

- PLCopen and compliance testing
- Tutorial
- 45 minute multi-choice, written test
- 45 minute practical programming and debugging test

Day 1

- Introduction to IEC61131 and software engineering
- Structured programming using the LD and FBD languages
- Getting started - practical session

Booking Information - Download the booking form and further details from: www.profi-bus.co.uk

For dates, prices, booking information & onsite courses contact:

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Other Courses at the Automation Systems Centre at Manchester Metropolitan University

Certified PROFIBUS Installer course

Internationally accredited one-day course covering the layout, installation and maintenance of PROFIBUS networks. Suitable for people with no previous fieldbus experience.

PROFIBUS Commissioning and Maintenance course

One-day add-on to the Installer course covering the practical techniques for commissioning and fault-finding on live PROFIBUS networks.

Certified PROFIBUS Engineer course

Internationally accredited 3½-day in-depth course covering PROFIBUS DP and PA network design commissioning and maintenance. Suitable only for engineers with some prior experience of fieldbus.

Certified AS-i Engineer course

Accredited 2-day in-depth course covering the popular Actuator Sensor Interface technology. Including system design and layout, commissioning and fault-finding and Safety at work overview.