Certified PROFIBUS Installer Course
PROFIBUS Commissioning and Maintenance Course
PROFIBUS System Design Course
Certified PROFIBUS Engineer Course
PROFIBUS Product Development Course

These courses are offered through the PROFIBUS International Competence Centre (PICC) at Manchester Metropolitan University

The PICC is located within the Automation Systems Centre (ASCent), which brings together training and research expertise in industrial automation, instrumentation and communication.

About PROFIBUS technology
PROFIBUS is the leading fieldbus technology providing communications for intelligent sensors and actuators used in industry. It is an open standard for communications that allows devices from different manufacturers to talk to each other over a common cable or network. Certified courses as offered by PICC are viewed as industry standards for those working with PROFIBUS technologies.

Certified PROFIBUS Installer Course
This course is relevant for anyone involved in planning, design, layout, installation and commissioning of PROFIBUS networks. No prior knowledge of PROFIBUS or fieldbus technologies is required.

You will learn how to layout, install and test complete PROFIBUS networks. The course covers:

- Basic PROFIBUS DP and PA network technology, station types and addressing
- Causes, effects and avoidance of transmission-line reflections and the importance of correct line-termination.
This course is relevant for anyone involved in planning, design, layout, installation and commissioning of PROFIBUS networks.

- Network and segment size limitations and the effect of transmission rate.
- Common wiring and layout pitfalls, modern cable and connector systems.
- Use of repeaters, couplers, link modules and fibre-optic segments.
- Network layout and design considerations.
- Wiring and installation testing and the use of bus test tools.
- Interference pickup (EMC), cable routing and earthing considerations.
- Earth potential problems and their avoidance.

Assessment is through multiple choice testing of theoretical understanding and practical testing of competency in wiring and testing PROFIBUS networks.

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<th>Course length</th>
<th>Pre-requisites</th>
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<td>1 Day</td>
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**PROFIBUS Commissioning and Maintenance Course**

This course provides an intermediate level of training covering fault-finding and maintenance techniques for application on operational PROFIBUS systems.

The course is a practical course covering:
- A general view of techniques for configuring PROFIBUS networks and devices
- Use of PROFIBUS analyser and Class-II master to diagnose network faults, device faults and I/O problems
- Interpretation of standard and extended diagnostic messages that are part of the standard PROFIBUS protocol
- Use of ProfiTrace on DA and PA systems
- PA Profile and use of PA engineering tools for PA device engineering, commissioning and parameterisation.
- The course becomes increasingly important not only because it is for fault-finding and health-checking but an essential part for understanding how fieldbus works and how your PROFIBUS systems perform. After this course, you should be able to
- Quickly locate, correct faults, and make recommendation for improved performance

This course is relevant for anyone involved in planning, design, layout, installation and commissioning of PROFIBUS networks.
This course is aimed at anyone who is dealing with the specification, design or procurement of modern automation and control systems at the engineering or technical level.

**PROFIBUS System Design Course**
A one-day course covering the optimal design of networked automation and control systems. Centred on PROFIBUS and PROFINET technology, but also covering the use of Ethernet, AS-i technology and system software.

Good quality PROFIBUS, PROFINET and AS-i training has been widely available for installers, maintenance technicians and engineers for many years. Unfortunately, key decision makers - managers, system designers and system integrators are quite often less well trained than others who are involved in the engineering. Many of the errors that can be seen in installations are traceable to fundamental decisions that were taken at the early stages of the project. For example, use of inappropriate fieldbus for an application, lack of awareness of maintenance and fault-finding facilities, over-complex or inappropriate system architecture, design decisions based on equipment purchasing cost rather than whole life-cycle costs.

This course is aimed at anyone who is dealing with the specification, design or procurement of modern automation and control systems at the engineering or technical level. The course is also suitable for device manufacturers, system integrators and technical sales/marketing people who want to know the best way to put systems together.

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**Certified PROFIBUS Engineer Course**
Internationally accredited and in-depth course covering the detailed theory of PROFIBUS DP and PA network operation, building on the basics taught through the Certified PROFIBUS Installer Course and Commissioning and Maintenance Course.

- PROFIBUS DP and PA network operation
- PROFIBUS data structure and telegrams in detail
- Interpretation of GSD files used to describe devices
- Cyclic data exchange (DP-V0), acyclic data exchange (DP-V1) and system timing
- PA segment design and layout for safe-area and hazardous-area installation
- System configuration using DP/PA couplers and link modules
- PA profile providing standard user interface to a wide variety of process instruments and actuators
- Introduction to functional safety systems and PROFIsafe

Assessment is through multiple choice testing of theoretical understanding and practical testing of competency in designing, wiring and testing PROFIBUS networks.

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<th>Course length</th>
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<tr>
<td>2 days</td>
<td>Certified PROFIBUS Installer Course, PROFIBUS Commissioning &amp; Maintenance Course</td>
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**PROFIBUS Product Development Course**
The course provides an extended overview of PROFIBUS operation and is for both PROFIBUS product developers and a wide range of audience who wants to know PROFIBUS and the fieldbus technology. The course covers details of the communication protocol, tools and techniques available for developing a PROFIBUS device e.g. a drive, transmitter, or actuator.

- PROFIBUS DP and PA network operation
- PROFIBUS data structure and telegrams in detail
- GSD files and develop a GSD file
- Device certification
- PROFIBUS ASICs Development Tools

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The PROFIBUS Group

The PROFIBUS Group is the UK’s regional association of PROFIBUS International (PI). PI is the largest automation community in the world. It heads a global network of vendors, developers, system integrators and end users with a common interest in promoting, supporting and using PROFIBUS and PROFINET. The PROFIBUS Group was established in 1993, and provides a range of services to its members including free access to PROFIBUS and PROFINET documentation, access to and discounts on training, consultancy and selected products, participation in events and access to the Members’ Forum on the website.

More information about The PROFIBUS Group and PROFIBUS International can be found at:

http://www.uk.profibus.com

Senior Members of The PROFIBUS Group’s steering committee include:

EMERSON  
CONTROL SYSTEMS

rotork

PEPPERL+FUCHS

Endress+Hauser

WAGO

MURR ELEKTRONIK

hitex

SIEMENS

ABB

Further information

More information on dates and prices can be found on our website:

www.sci-eng.mmu.ac.uk/ascent/training_courses

To enquire and book our courses, please contact:

The PROFIBUS Group
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Fax+44 (0)870 141 7378
Email: admin@uk.profibus.com

This information is correct at time of going to press. For terms and conditions applicable to the provision of the University’s Educational Services please refer to the prospectus. January 2012.