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## Course Outline: Fundamentals of Modbus

Modbus is a widely used communication protocol in industrial automation that enables data exchange between electronic devices. The protocol supports reading and writing data such as sensor measurements, actuator commands, and system statuses. Its ease of implementation and compatibility with various industrial devices make it a popular choice for connecting Programmable Logic Controllers (PLCs), Human-machine Interfaces (HMIs), and Remote Terminal Units (RTUs).

### Course information

The Fundamentals of Modbus Course is a one-day, hands-on training program designed to equip individuals with the knowledge and tools necessary to implement and maintain Modbus-based systems effectively.

This course provides an introduction to Modbus, a widely used industrial communication protocol. Participants will explore the fundamentals of digital systems, including their operating principles and underlying physics. The course covers physical transmission media, explaining how data is transmitted across different network types. Attendees will also learn about various Modbus protocol versions and how they facilitate seamless communication between devices in automation environments.

A key focus of the training is understanding the Modbus protocol, including its structure, functions, and practical applications. Participants will engage in hands-on exercises to apply their knowledge, gaining experience in setting up and troubleshooting Modbus networks. The course concludes with practical exercises, ensuring attendees will have a strong grasp of Modbus communication.

### Course outline

#### Day 1

- What is Modbus?
- Introduction to digital systems
- Digital system operating principles
- Digital system physics
- Physical transmission media
- Modbus protocol versions
- The Modbus protocol
- Practical exercises

### 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?

Installers, network engineers, project planners, industrial engineers, maintenance workers, plant employees.

### Certification

Upon completion of the course, attendees will be awarded a certificate of attendance.

### **CPD points**

Attendees can earn one ECSA-accredited CPD point 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**

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