



The market leader in Communications Training

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# Practical LAN Design & Implementation

## 5-day course

The programme equips experienced cable installers and IT technicians with the skills and knowledge to understand the elements of modern enterprise networks and to be able to specify, design and implement a typical data network such as is found in many small to medium businesses.

The course emphasises up to date standards for networks and cabling systems, together with practical assignments to reinforce the theory. A final design exercise provides real world examples of LANs for enterprise environments.

On successful completion, participants will have gained the knowledge to design, build and implement LAN networks that conform to the most recent cabling and network standards.

### Course Overview

#### Electronic signals

- Basic requirements of data transmission
- Encoding techniques & their importance in data communications

#### LAN technologies and devices

- The history & operation of data networks and the devices that make them possible
- Introduction to Ethernet and wireless including restrictions, methods of operation, bandwidth, maximum distances, data speeds & frame structures.

#### Cabling topologies

- Insight into the most recent copper and optical cabling standards and procedures
- Cable containment and management for effective operation
- Effective documentation and records
- Working alongside other systems and trades, e.g. electrical

#### Grounding and bonding

- Implications of EMI on cabling systems that support high speed data
- Legislation and system performance

#### Network protocols

- Review of TCP/IP & other common protocols
- Use of IP address format to connect network devices

#### Practical LAN design

- Design a LAN using computers, hubs, bridges, switches & wireless access points
- Configure & implement a LAN using IP addressing
- Design requirements to make the LAN resilient & fault tolerant
- Tools, visual indicators & tips to trouble shoot a LAN

70% Theory 30% Practical



#### ▶ Qualification

BTEC Professional Award in LAN Design & Implementation  
BICSI CECs: 40 ITS, 40 RCDD & 40 NTS  
CNet Certificate

#### ▶ Who should attend

Project managers, installation engineers, IT personnel, network engineers and those seeking to become involved in LAN network design

#### ▶ Related Training

Practical TCP/IP  
BICSI RCDD  
NTS Specialist/BICSI NTS Speciality Exam  
Wireless LAN Design & Installation  
Design of Voice over IP Networks  
Convergence Data Networking & Telephony

#### ▶ Course objectives

Delegates gain knowledge of modern LAN design and devices and have a full understanding of installing, commissioning and troubleshooting LAN's from small to medium enterprise networks

#### ▶ Prerequisites

A basic knowledge and understanding of TCP/IP together with copper and fibre optic cabling systems is necessary

#### ▶ Course Location

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Suffolk



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