



**Certified Network
Infrastructure Technician**

**BTEC Level 4
Professional Award**

The **Global Leader of Technical Education and Training**
for the **Data Centre & Network Infrastructure Sectors**

Certified Network Infrastructure Technician (CNIT®)

5 DAY PROGRAM

Combined: 50% Theory 50% Practical

The CNIT® Program consists of 244 pages of rich technical content.

Student Profile

This program is designed for those wishing to extend their knowledge, practical hands-on skills, qualifications and certifications into a wider project environment as a Site Delivery Manager with aspirations to progress into roles such as:

- ▶ Site Supervisor (Team Leadership, Health & Safety Management)
- ▶ Site Logistics (Task Management, Stores & Equipment Co-ordination)
- ▶ Technical Lead (Surveyor, Resolver, Quality Assurance, Project Closure)

Pre-Requisites

At least four years verifiable experience within the network infrastructure sector or relevant qualifications. Successful completion of the Certified Network Cable Installer (CNCI®) program would be an advantage.

Program Structure

This classroom based program is 50% theoretical study and 50% practical hands-on-training, led by one of CNet Training's expert instructors.

Program Objectives

Successful students will have the knowledge, competency and confidence in complex site environments.

Qualification

- ▶ Internationally and industry recognised
Level 4 BTEC Professional Award

Certification

- ▶ Certified Network Infrastructure Technician (CNIT®) certification
- ▶ Use of CNIT post nominal title
- ▶ Use of the CNIT® logo

Additional Awards

- ▶ Eligibility for an ECS (Electrotechnical Certification Scheme) Datacomms card
- ▶ Continual Professional Development (CPDs)

Certified Network Infrastructure Technician (CNIT®)

Program Overview

Take your existing network infrastructure skills to new levels allowing you to successfully manage, control and deliver major infrastructure projects.

The Certified Network Infrastructure Technician (CNIT®) program is a comprehensive program perfect for those with at least four years of verifiable experience within the network infrastructure sector, or relevant qualifications and certifications into a wider project environment.

The five-day program aims to develop the knowledge and skills required to perform the multi-faceted role of a site delivery manager. Students will greatly enhance their technical knowledge through a complex case study mastering the requirements for making survey decisions regarding spaces; pathways and containment, managing health and safety procedures and delivering a complex task schedule. They will also gain a valuable insight into the need to establish effective communications with key stakeholders. A certified CNIT® will be undaunted when dealing with escalations and problem resolution within a strategic network infrastructure project.

The CNIT® also takes into account the requirements of the current BS EN, TIA and ISO standards, whilst also meeting the architectural and technical requirements. During the program students will also have access to current standards for reference purposes.

Current and emerging networking technologies will also be explored including Ethernet, Wireless and POE LANs. Principles of Intelligent Buildings also feature with insights into Building Management Systems (BMS) and Building Automation Systems (BAS).

Practical hands-on sessions are incorporated throughout this program, including a focus on advanced copper and fibre infrastructure troubleshooting, wireless survey and wireless network testing tools. The organisation and management of cable test results through OEM software with the latest features and capabilities exploited in detail.

On successful completion students can demonstrate the highest levels of knowledge, competency and confidence in complex site environments, demonstrating efficiencies in both time and cost, coupled with the knowledge of the very latest technical capabilities dominating network infrastructure today.

A CNIT® can also feel confident that they are progressing through The Global Network Infrastructure Education Framework. They also gain an internationally recognised BTEC Level 4 Professional qualification and official CNIT® certification. This certification enters the student into a commitment to life-long learning and offers the perfect portal to ensure knowledge; skills and certification remain current and up-to-date. Each certification gained from CNet Training requires re-certifying every three years. The process is simple, cost effective and easy via an online learning management system allowing knowledge to be brought up-to-date to reflect the very latest changes and technical developments. Re-certified students can also benefit from utilising the latest program material, can continue to use the CNIT® logo and post nominal letters for the next three years.

CNIT® Benefits for Individuals

- ▶ Can plan tasks and materials with confidence and accuracy
- ▶ New and improved technical skills, widening your scope of capability with up-to-date technology
- ▶ Greater understanding of project complexity enabling more effective delivery management
- ▶ Increased focus on service excellence resulting in a “right first time” approach
- ▶ Awareness of stakeholders enabling more effective communications
- ▶ Ability to effectively manage teams, resulting in improved team morale and performance
- ▶ Industry recognised qualification and official certification

CNIT® Benefits for Business

- ▶ Increased confidence that your project delivery managers can successfully deliver projects with the minimum of supervision and oversight
- ▶ Improve confidence in project progression through accurate reporting
- ▶ Increased customer satisfaction leading to quicker project closure and final payment
- ▶ Greater opportunities for repeat business due to improved quality of service
- ▶ A more structured delivery methodology through standardised task planning and strategies
- ▶ Investment in team development, improves morale and job satisfaction leading to greater staff loyalty
- ▶ Realise cost savings through greater efficiencies

Certified Network Infrastructure Technician (CNIT®) Topics

CNIT®

Role of the CNIT®

- ▶ Role of the CNIT® in:
 - ▶ The core layer
 - ▶ The distribution layer
 - ▶ The access layer

Fundamentals of Datacommunications

- ▶ Datacommunications network structure
- ▶ 7-layer OSI model
- ▶ Ethernet
- ▶ Frame format
- ▶ IP Addressing
- ▶ Wide Area Network (WAN) protocols

Networking Principles

- ▶ Benefits of networking
- ▶ Network characteristics
- ▶ Modern network components
- ▶ 3-level architecture

Ethernet

- ▶ 100BaseT/1000BaseT
- ▶ 10Gbit ethernet
- ▶ 40/100G ethernet
- ▶ Bandwidth/distance considerations

Standards

- ▶ Defining standards
- ▶ Governance and compliance
- ▶ BS EN 50173 series
- ▶ BS EN 50174 series
- ▶ Structural hierarchy
- ▶ Technical requirements

Survey Principles

- ▶ Preparation
- ▶ Health and Safety considerations
- ▶ LAN survey
 - ▶ Desktop planning
 - ▶ OSP walkthrough
 - ▶ ISP walkthrough
 - ▶ WLAN surveys

Cabinets and Containment

- ▶ Cabinet structure and components
- ▶ Containment choices, types and construction methods
- ▶ Separation of services

Fixings

- ▶ Fixing choices, types and construction methods
- ▶ Tools
- ▶ Deflection calculations
- ▶ Structural support

Fire Stopping

- ▶ Regulations
- ▶ Compartmentation
- ▶ Fire stopping types

Outside Plant

- ▶ PPE
- ▶ Cable pits and manholes
- ▶ OSP pathways
- ▶ Building entrance facilities
- ▶ Segregation

Additional Network Architecture

- ▶ Building Management Systems (BMS)
- ▶ Building Automated Systems (BAS)
- ▶ VoIP
- ▶ Power Over Ethernet (POE)

Wireless Network Standards

- ▶ 802.11 variations
- ▶ IEEE standards
- ▶ Frequency bands
- ▶ Channel overlap

Wireless Network Architecture

- ▶ Requirements for a wireless solution
- ▶ Wireless LAN and WiFi defined
- ▶ Wireless network types:
 - ▶ Wireless LAN (WLAN)
 - ▶ Wireless MAN (WMAN)
 - ▶ WiMAX
 - ▶ Propagation and attenuation

Advanced Infrastructure Troubleshooting

- Copper

- ▶ Custom setup
- ▶ Standards based setup EN vs TIA
- ▶ 3db/4db rule test and prove
- ▶ Alien crosstalk plan and test
- ▶ 10% over length testing
- ▶ POE testing
- ▶ Data Centre test requirements
- ▶ Hands-on practical session for copper testing using latest industry test equipment

Advanced Infrastructure Troubleshooting

- Fibre

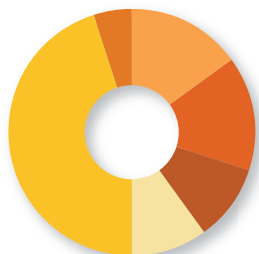
- ▶ Loss budgeting
- ▶ Passive optical networks
- ▶ OM mismatch
- ▶ OTDR custom setup
- ▶ OTDR test and downloads
- ▶ OLS/OTP test and documentation
- ▶ OTDR/OLS vs application testing
- ▶ Hands-on practical session for fibre testing using latest industry test equipment

OEM Software Project Structure

- ▶ Complex project structure
- ▶ Project creation
- ▶ Importing test results
- ▶ Cloud access
- ▶ Re-certification

There are two case studies to be completed within the program time frame, in support of the LAN and WLAN surveys.

CNIT® Program Breakdown



- Advanced Copper Testing
- Advanced Fibre Testing
- WAP Survey Activity
- LAN Survey Activity
- Technical Theory
- Case Study

CNIT® Role and Capabilities

