CNet Training
An Uptime Education Company

Global Leading Technical Education for the Digital Infrastructure Industry

Certified Wireless Infrastructure Technician (CWIT®)

Learn how to plan and install a wireless network to facilitate high speed access for smart mobile devices. Using the latest wireless technologies, ensure all users have comprehensive access at all times to benefit from a seamless roaming experience.

Program Overview

The Certified Wireless Infrastructure Technician (CWIT®) program takes existing network cabling knowledge and skills to the next level by providing learners with a valuable insight into current and emerging wireless networking technologies used to provide in-building wireless coverage. Methods used for connection to backbone networks also feature, with explorations into the principles of microwave radio bearers, fibre systems and cable technologies. Each subject area covers the latest standards and codes of practice, and ensures technicians are armed with everything they need to undertake installation projects to the highest possible standards.

Focused practical hands-on sessions are incorporated throughout this program including advanced wireless infrastructure installation, troubleshooting, wireless coverage surveys and network testing tools. The organisation and management of site records and wireless system test results through OEM software are also included.

The duration of this program is five days; the content is comprehensive and detailed, allowing network infrastructure professionals to have the potential to add real value to their skills by including these complex areas in their product portfolio. A qualified CWIT® will be undaunted when dealing with escalations and problem resolution within a strategic wireless network project.

A certified CWIT® also considers the requirements for compliance, having a full understanding of national and international regulations, codes and standards. During the program, learners will be provided a valuable opportunity to access the latest industry standards.

On successful completion, learners can demonstrate the highest levels of competency and feel confident that they possess the very latest technical abilities within these fields of installation.

The CWIT® program is classroom-based and led by one of CNet's expert Instructors.

Program Duration

5 days.

Program Format

30% Theory, 20% Case Study, 50% Practical.

Program Objectives

Learners will gain the knowledge and practical skills to confidently install, test and certify installations in support of Wireless Ethernet and Small Cell applications in the WAN environment and other emerging networking technologies.

Learner Profile

This program is designed for individuals experienced within the network cabling installation environment who wish to extend their hands-on practical skills, knowledge, qualifications and certifications in relation to generic wireless installation within diverse environments and with aspirations to progress into roles such as:

- Installation Technician
- Commissioning Engineer
- Wireless Network Designer
- Wireless Project Delivery Manager

Pre-requisites

A minimum of two years experience within the cable or wireless installation sector is required. Successful completion of the Certified Network Cable Installer (CNCI®) program would be an advantage. If you would like to discuss your experience or suitability for this program please contact us.

Program Requirements

Learners are required to have:

- A webcam and microphone enabled laptop with unrestricted wireless internet connectivity and a pre-installed web browser
- A suitable application for reading/annotating PDFs and a suitable application for editing standard office documents such as Microsoft Word, PowerPoint, and Excel

Qualification

- Internationally and industry recognised Pearson BTEC Level 4 Award in Certified Wireless Infrastructure Technician

Certification

- Official Certified Wireless Infrastructure Technician (CWIT®) certification
- Use of the CWIT post nominal title
- Use of the official CWIT® digital badge
- Use of the CWIT® logo

Certifications are a commitment to lifelong learning and offer the perfect portal to ensure knowledge, skills and certification remain current and up-to-date. Each certification gained requires re-certifying every three years via an online learning management system.

Additional Awards

- Continuing Professional Development (CPDs)
- 5 IEEE Continual Education Units (CEUs)

"The CWIT® program has given me a really good insight into the different ways of working with Wi-Fi and internal cellular networks. The Instructor was very knowledgeable, explaining everything clearly and making time for people who did not understand."

CWIT® Learner Comment

Certified Wireless Infrastructure Technician (CWIT®) Topics

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

Regulations, Standards, Codes, Organisations and Forums
- Wireless regulations, standards, codes and organisations
- Wireless trade organisations and forums
- Emerging wireless technologies and related standards

Fundamentals of Wireless Communications
- Electromagnetic Spectrum
- Advantages of the wireless solutions
- RF propagation
- Modulation schemes

Wireless Networking Principles
- Cellular, WLAN, PAN and Microwave technologies
- Femto/Pico/Micro and Macrocells
- WLAN types
- Frequency bands and channel numbers
- Core networks
- MIMO antennas
- Remote Radio Head (RRH)
- PoE switches
- Self-organising Networks (SON)
- Network and security gateways
- Coverage and capacity 2G, 3G, 4G LTE and 5G NR
- WI-FI 4, 5, 6, and 6E
- Optimal positioning of RF units
- Li-Fi
- Wiring the wireless network

Planning for In-building Installations
- On-site health and safety assessment
- Wireless infrastructure administration and floor plans
- Capacity and coverage plans arising from use of planning tools
- Ethernet and fibre cable route planning
- Equipment mounting choices and types
- Iteration process – ideal versus practical choices
- Rack space and equipment connection planning
- PoE and AC/DC planning
- Active and passive distributed antenna systems
- Convergence of IBW solutions
- The role of wireless in SMART cities

In-building Installations
- Structural support for wall and ceiling RF unit fixings
- Tools used for wall and ceiling fixings
- PPE, steps, ladders, towers used during mounting of RF units
- Installation of PoE switches and servers
- Connection, earthing and AC/DC power
- Testing and connection of ethernet and optical fibre cables
- Installation of internal RF antenna 1800MHz, 2.4GHz, 5GHz and 6 GHz
- Extending IBW solutions out of the building

In-building Commissioning
- Powering up switches and servers
- Use of CLI and GUI
- Entry of initial parameters to enable SON
- Testing: RF coverage, cable compliance, handover and provision of service
- Optimisation of RF coverage through physical adjustments
- Documenting test results

Wireless Infrastructure Troubleshooting
- Identification of faulty RF units or PoE devices
- PoE testing
- Coverage testing using test phone
- Typical replacement procedures: RF units, switches, servers

There are three case studies to be completed within the program, one each in support of WLAN, IBW and Cellular wireless infrastructure planning and installation. A multiple choice exam at the end of the program forms the summative assessment.

CWIT® Benefits for Individuals

- Enhance technical capability and ability to deliver wireless network projects
- Greater understanding of network architecture and the choice of wireless network components
- Opportunity for personal development leading to enhanced role satisfaction
- Gain an industry recognised qualification and official certification

CWIT® Benefits for Businesses

- Enhance your technical portfolio, leading to greater opportunities when tendering for projects
- Develop business opportunities in technologies that are normally considered specialised
- Realise cost savings by retaining business internally
- Investment in team development improves morale and job satisfaction leading to greater staff loyalty