The Digital Infrastructure Industry and Career Overview

cnet-training.com/resettlement

Trusted Resettlement and Ex-forces Education

Since 1996, CNet Training has educated thousands of Service Leavers, providing them with the skills, hands-on experience and sought after qualifications to enter the lucrative network cable and data centre sectors. Today, CNet is the only industry dedicated education provider in the world to provide both internationally recognised qualifications and official certification for their programs.

CNet is proud to be the originators of The Global Digital Infrastructure Education Framework which forms the benchmark education for the industry across the world. It maps professional education programs to actual career routes and progression throughout the industry allowing learners to enhance their skills, knowledge, industry recognised qualifications and official certifications as they progress. And, of course, many programs are eligible for ELC funding allowing Service Leavers extra help to continue to progress their careers.

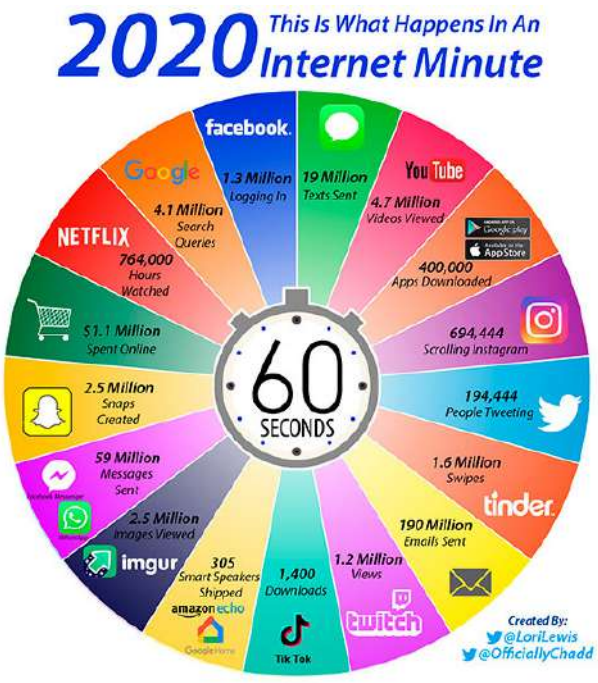
Every CNet technical education program has been carefully designed to blend technical knowledge with essential hands-on skills that are needed for the industry. We have an on-going schedule to regularly review the content of each program to ensure it reflects the very latest changes in technology, in addition to preparing students for possible new and emerging industry trends that are just around the corner. Plus, working alongside major companies in the industry CNet Training ensures each program content continues to meet the needs of the industry today and reflects the emerging future trends.

CNet believe that it's the combination of program design, alongside the quality of expert Instructors, many of whom are ex-Forces themselves, that form the secret of their on-going success.

To talk about your new career or, if you are already in the industry and want to progress your knowledge further, please do contact us. You can email **resettlement@cnet-training.com**, call us on **01284 767100** or visit **cnet-training.com/resettlement**

The Network Cable Infrastructure Sector

Everyone relies on network cable infrastructure and often without realising. Whether it is to check emails, manage traffic lights, maintain safety through air traffic control, watch Netflix, run a global organisation or utilise technology without even knowing.



Commonly referred to as the 4th utility and likened to other essential utilities such as water, electricity and gas, Broadband relies on copper and fibre optic network cable infrastructure which is absolutely critical to maintain the flow of communication services.

CNet's network cable infrastructure technical education programs are the only industry dedicated programs to award both official certifications and internationally recognised qualifications, they provide credentials that are sought and required within job role specifications across the UK and beyond. CNet's programs focus on accuracy and quality of work deemed essential in order to maintain service availability.

Career Opportunities

Career Opportunities Within Network Cabling are Strong.

Considering the world relies on the network cable infrastructures it's a sector that is only set to grow and those who are able to prove their skills and knowledge with a certification and qualification are in demand. Many installation companies are keen to employ certified individuals; indeed, the Certified Network Cable Installer (CNCI®) program and certification is often stated as a must-have within tender documentation for new builds and refurbishment projects across the UK.

A Growing Market

Smart buildings, smart homes and the Internet of Things (IoT) are dominating the digital infrastructure sector at the moment, with the global smart building market size expected to reach USD 109.46 Billion by 2026 (Fortune Business Insights).
IoT technologies deliver comfort, security and energy efficiencies across the entire range of industrial, healthcare, commercial and domestic buildings using smart control devices on an integrated network platform.

Underpinning this capability is the network, a combination of active network switching and passive cabling components that deliver the communications path, where the big game-changer of the day is Power over Ethernet (PoE). PoE delivers operating power to the device from the network switch, routing through the data cable. With Category 6A cable being generally accepted as the minimum requirement for PoE projects, the demand for network upgrades is expected to rise significantly.
Global PoE market is expected to reach $1,048.2 million USD by 2022 dominating the Wide Area Network (WAN) environment are the high-profile strategies to deliver full fibre broadband to all homes and businesses and the 5G infrastructure roll-out.

Both technologies require high speed, low latency networks to deliver their respective services, with singlemode optical fibre being the preferred solution. The UK government alone is recommending an investment of £30bn to upgrade legacy national infrastructure to 'full fibre' solutions (House of Commons Library). Mainstream Internet Service Providers (ISPs) and Alternative Service Providers (Alts) are ramping-up projects to deliver the significant amount of fibres required and are turning to mass-fibre optic cables, high density ribbon based solutions delivering up to 1728 fibres in a 22mm diameter cable.

Who Could You Work For?

Certifications are in Demand

CNet's certifications are shaping the future of the network infrastructure industry as the industry standard certifications for those working throughout the network cabling and data centre sectors.

The Certified Network Cable Installer (CNCI®) certification in particular has become sought after. The certification, has been fully embraced and approved by major industry organisations, who are specifying it as the new 'must have' official certification for their cable installation teams. Having this accolade from the sector itself confirms the importance of this knowledge and certifications The CNCI® is also specified by The Royal Signals for their technicians.

The CNCI® is dedicated to providing cable installers with everything they need to confidently and accurately prepare, install, test and certify copper and fibre cabling systems, specifically for those wishing to demonstrate the highest levels of knowledge, skills and expertise in network infrastructure. Blending a perfect mix of theoretical study and practical exercises the CNCI® certifies individuals' ability to work to the correct cabling standards and follow the recommended codes of practice when undertaking cable installation projects. See below copies of actual consultant specifications which show just how important the CNCI® certification is. Read further into this brochure to read the full details of the CNCI® program and others spanning the network cable infrastructure and data centre sectors.

Minimum of 50% of Installation Personnel to be Certified Network Cable Installer (CNCI®) Certified

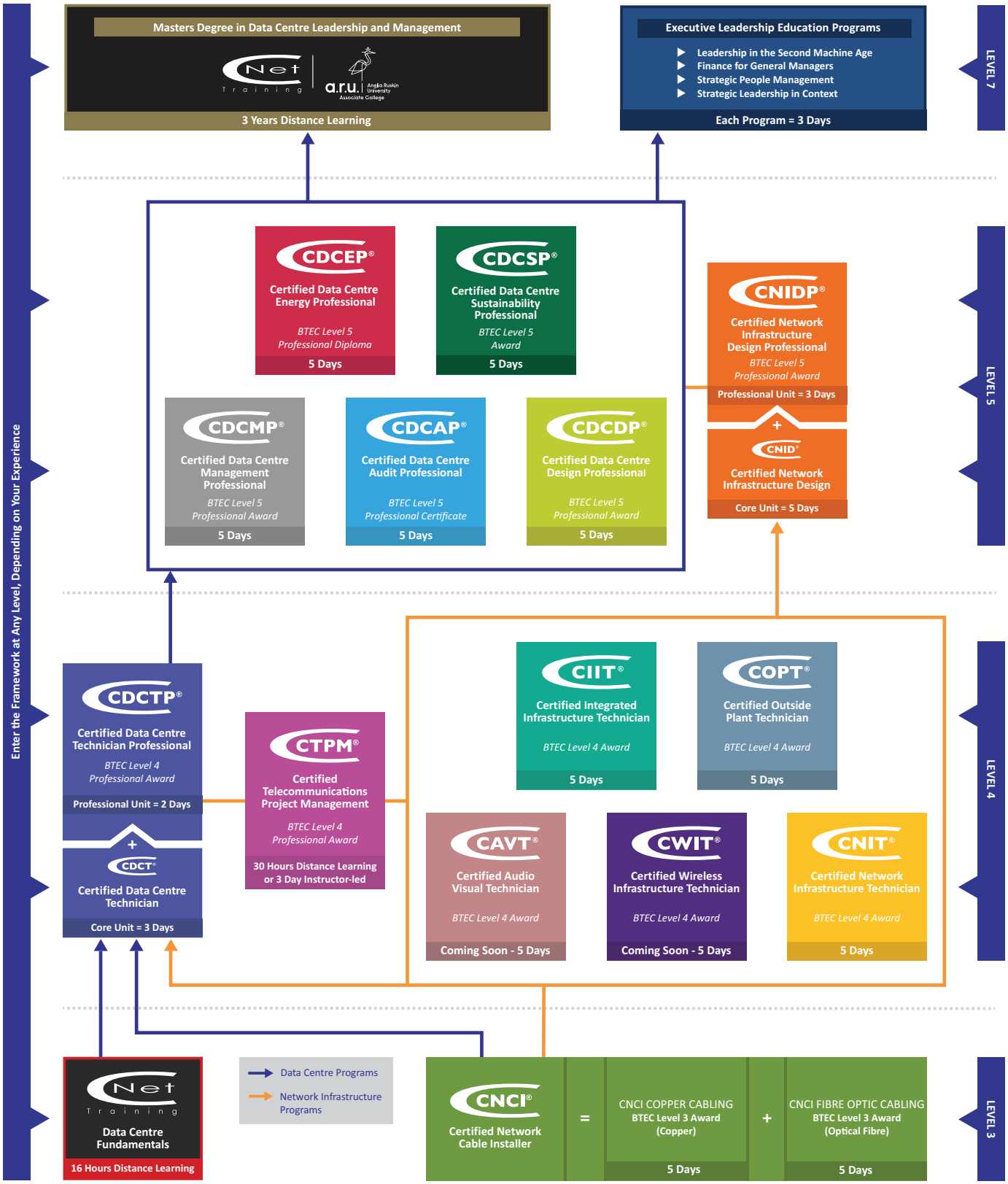
The SCC shall ensure that a minimum of 50% of installation personnel proposed for this project are CNCI® certified. A paper or electronic copy of the SCC accreditation shall be submitted prior to the installation of the cabling system commencing. The SCC shall provide commitment to this requirement at tender stage, shall ensure that the relevant documentation is submitted four weeks prior to works commencing on site and understand that site personnel credentials will be subject to qualification. The SCC shall provide details of additional qualifications (i.e. CNIT® or CNID®) that will be held by directly employed personnel during the projected installation programme and their proposed relationship to the project (i.e. as a designer or site manager etc.). Where CNCI® certification is recognised or accepted by the SCSM in conjunction with their installation and warranty requirements, the SCC shall provide documented evidence to support this. The SCC shall identify any discrepancies between the CNCI® certified installation requirements and the SCSM installation requirements, along with the proposed mitigation to resolve such discrepancies.

Minimum of 50% of Personnel Undertaking the Installation will be Certified Network Cable Installer (CNCI®)

Cordless Consultants require that a minimum of 50% of personnel undertaking the installation of the SCS will be CNCI® qualified. This requirement has been put in place to help ensure the quality of the SCS installation expected by Cordless Consultants and The Client is achieved. The Tenderer shall confirm in its response whether it is able to achieve this requirement and provide a statement committing to meet this requirement. The Tenderer shall also state in its response any other relevant qualifications (e.g. CNIT® and CNID®) held by its personnel proposed to work on this project. The sub-contractor must also provide personnel trained to the required level to provide the SCS manufacturer's warranty, if this differs from the above. As part of its Quality Assurance process, to ensure the requirements above are being undertaken, Cordless Consultants will undertake checks of the credentials of onsite personnel.

Industry Career Progression

Each program on CNet Training's highly acclaimed Global Digital Infrastructure Education Framework has been designed to address the skills and knowledge requirements of those working in different areas of these vibrant and fast moving sectors. Whilst the programs flow perfectly from one to another they are of equal value as stand alone programs, plus you can enter the framework at any level depending on your level of experience.



Resettlement and ELC Funded Education Programs

See next page for information on the tiers used.

Package	What is Included	Duration	Cost	Cost After ELC Contribution
Current Resettlement Package	Certified Network Cable Installer (CNCI®)	10-day classroom program 10-day work placement	£2,634 inc VAT	£1,634 inc VAT – lower tier £634 inc VAT – higher tier
Telecommunications Project Management	Certified Telecommunications Project Management (CTPM®)	3-day classroom program	£1,554 inc VAT	£554 inc VAT – lower tier £310.80 inc VAT – higher tier
Network Infrastructure Technician	Certified Network Infrastructure Technician (CNIT®)	5-day classroom program	£2,154 inc VAT	£1,154 inc VAT – lower tier £430.80 – higher tier
Data Centre Technician Package	Certified Network Cable Installer (CNCI®) Data Centre Fundamentals Certified Data Centre Technician Professional (CDCTP®)	10-day classroom program 10-day work placement 16 Hours Distance Learning 5-day program Classroom or Remote Attendance	£4,995 inc VAT	£3,995 inc VAT – lower tier £2,995 inc VAT – higher tier
Installer/Site Manager Package	Certified Network Cable Installer (CNCI®) Certified Network Infrastructure Technician (CNIT®)	10-day classroom program 10-day work placement 5-day classroom program or Remote Attendance	£3,995 inc VAT	£2,995 inc VAT – lower tier £1,995 inc VAT – higher tier
Advanced Installer Package	Certified Network Cable Installer (CNCI®) Plus any 1 of the following: Certified Integrated Infrastructure Technician (CIIT®) Or Certified Outside Plant Technician (COPT®)	2 x 5-day classroom programs	£3,995 inc VAT	£2,995 inc VAT – lower tier £1,995 inc VAT – higher tier
Advanced Technician Package	Any 2 of the following L4 programs: Certified Network Infrastructure Technician (CNIT®) Certified Integrated Infrastructure Technician (CIIT®) Certified Outside Plant Technician (COPT®)	2 x 5-day classroom programs Remote attendance available for CNIT®	£3,650 inc VAT	£2,650 inc VAT – lower tier £1,650 inc VAT – higher tier
Network Infrastructure Design	Certified Network Infrastructure Design Professional (CNIDP®)	8-day classroom program or Remote Attendance	£3,924 inc VAT	£2,924 inc VAT - lower £1,924 inc VAT – higher tier
Data Centre Design	Certified Data Centre Design Professional (CDCDP®)	5-day classroom program or Remote Attendance	£5,754 inc VAT	£4,754 inc VAT – lower tier £3,754 inc VAT – higher tier
Data Centre Management	Certified Data Centre Management Professional (CDCMP®)	5-day classroom program or Remote Attendance	£5,754 inc VAT	£4,754 inc VAT – lower tier £3,754 inc VAT – higher tier
Masters Degree in Data Centre Leadership and Management	Masters Degree in Data Centre Leadership and Management (MA)	3 Years	£21,600 inc VAT	£18,600 inc VAT – lower tier £15,600 inc VAT – higher tier

ELC Funding

Before being eligible to make an ELC claim, individual scheme members must have completed no less than six years eligible service (lower tier).

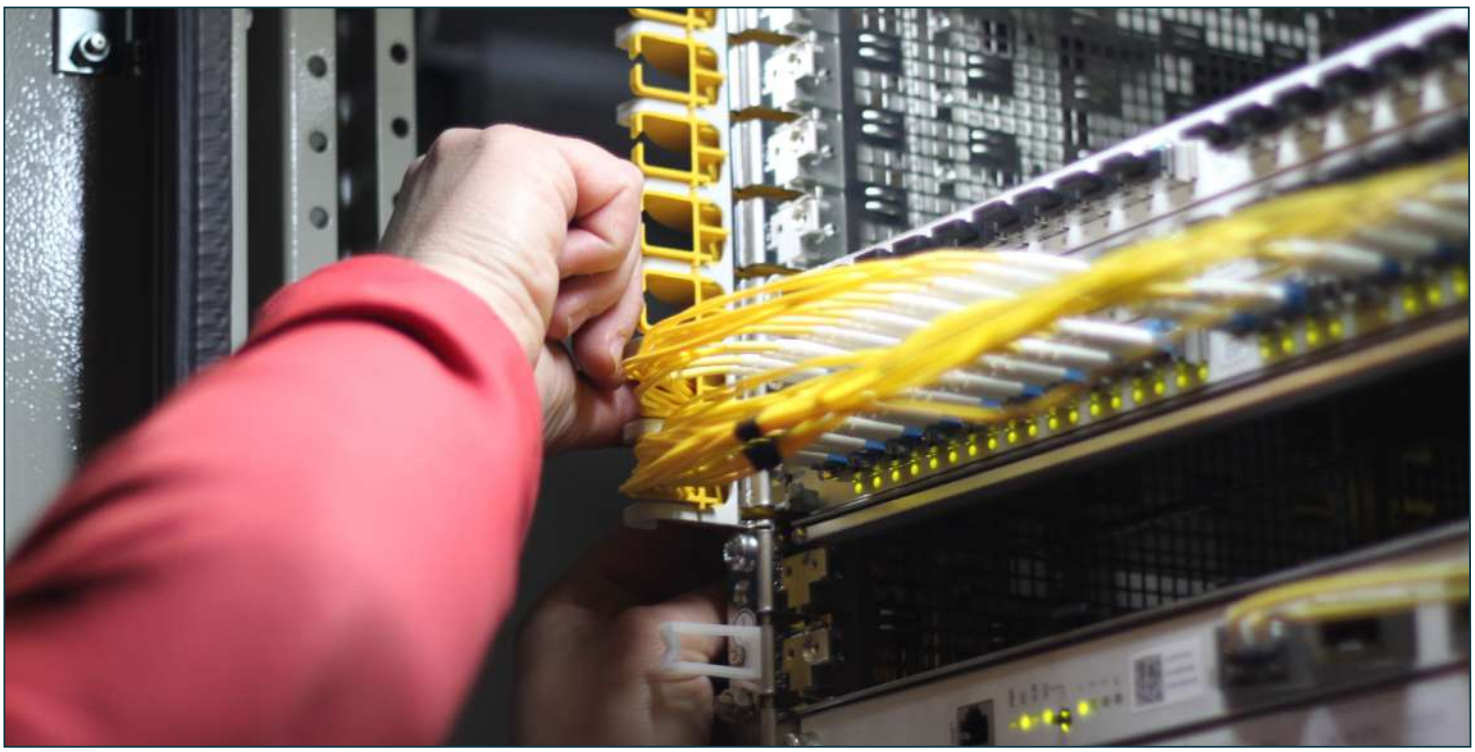
The lower tier (six years service or more) of funding is up to £1,000 per claim instalment
The higher tier (eight years service) is up to £2,000 per claim instalment.

Only service accumulated since 1st April 2000, may be counted as eligible service for the purpose of the ELC Scheme.

Service leavers are entitled to make three ELC claims in total. They can only make one claim per financial year (1 April - 31 March), however if they have served between 6 and 8 years they are eligible to aggregate all three claims together.

Work Placement

Work placement is an added value service CNet provides with the Certified Network Cable Installer (CNCI®) program. Following the CNCI® program Service Leavers are placed with a cable installation company for a 10-day work placement. The CNet team arrange the placement for you so you can gain valuable on-the-job hands-on experience. Plus, some cable installation companies are currently recruiting so we will urge you to treat the placement as a two-week job interview to really demonstrate your skills, ability and enthusiasm to maximise the chances of being offered employment with the company.

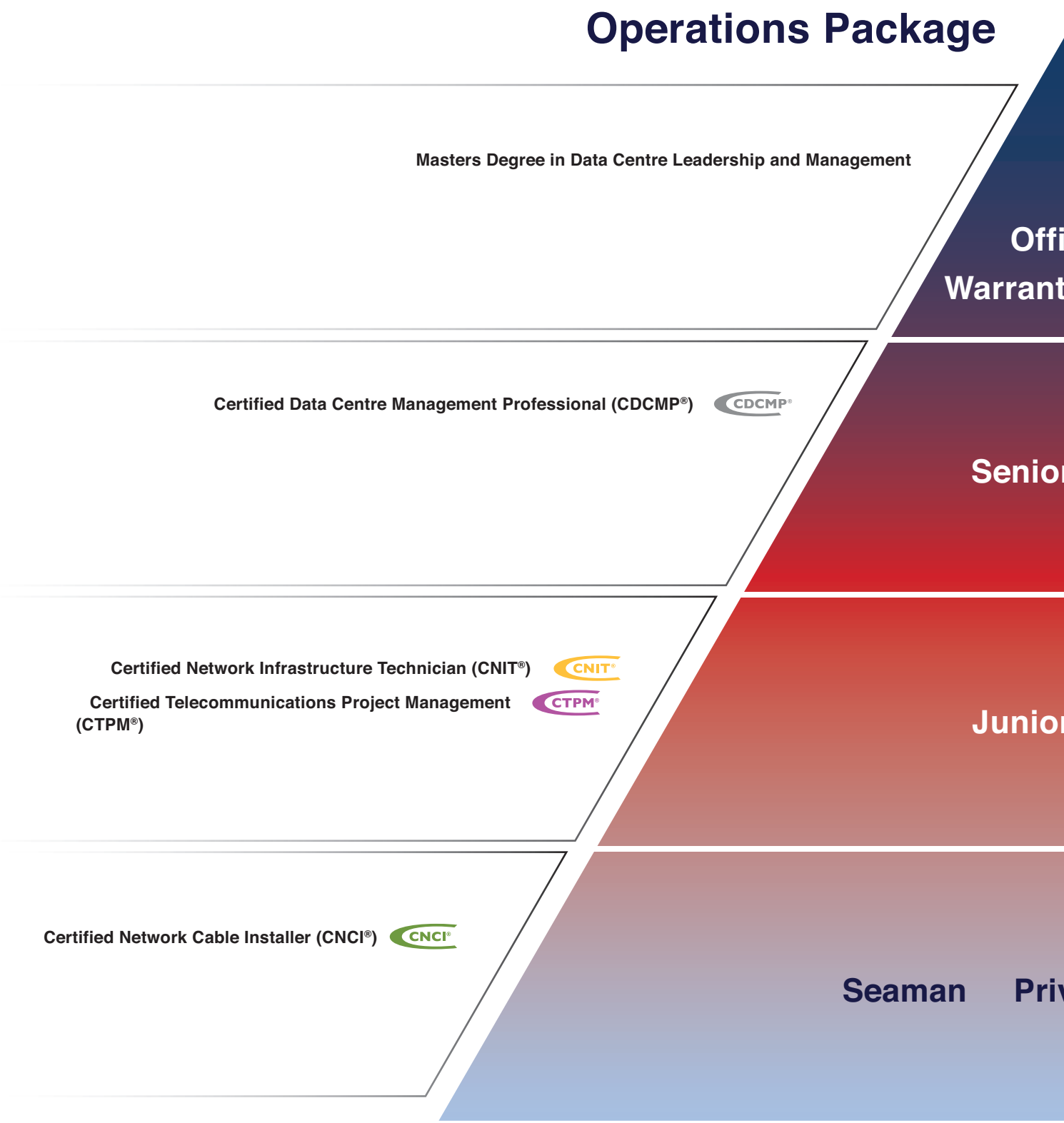


Typical Roles and Salaries

Job Title	Responsibilities	Salary
Cabling Engineer	Cable installation, termination and testing of copper and fibre cabling	£20-45k
Site Supervisor/ Lead Engineer	Supervising and delivering complex infrastructure projects within site environments	£30-35k
Project Manager	Produce and implement project plans and activities, and motivate teams, to manage project through to a successful completion	£40-£70k
Data Centre Technician	Install, configure, test, troubleshoot and maintain hardware components and server software. Configure complex components. Ensure the data centre facility is operated and maintained to the highest possible standards.	£35-45k

Career Insight

CNet's highly acclaimed Global Digital Infrastructure Education Framework offers professionals throughout the industry the opportunity to plan knowledge enhancement in line with actual career progression. Below, is the Resettlement and Forces Leaver Education Framework that provides insight into the recommended education programs based on your current experience.



Technical Package

cer
Officer

r NCO

r NCO

vate Airman

Masters Degree in Data Centre Leadership and Management

Certified Network Infrastructure Design Professional (CNIDP®)

Certified Data Centre Design Professional (CDCDP®)

Certified Network Cable Installer (CNCI®)

Certified Network Infrastructure Technician (CNIT®)

Certified Integrated Infrastructure Technician (CIIT®)

Certified Outside Plant Technician (COPT®)

Data Centre Fundamentals

Certified Data Centre Technician Professional (CDCTP®)

Certified Network Cable Installer (CNCI®)

Shaping the future of the Network Infrastructure Sector

Certified Network Cable Installer (CNCI®) Resettlement Program

with a 10 Day Work Placement

Certified Network Cable Installer - Resettlement

2 x BTEC Level 3 Awards (Copper & Fibre)

=

10 DAY WORK PLACEMENT

+

5 DAYS CNCI FIBRE OPTIC CABLING
BTEC Level 3 Award (Fibre)

+

5 DAYS CNCI COPPER CABLING
BTEC Level 3 Award (Copper)

The Certified Network Cable Installer (CNCI®) program is shaping the future of the network infrastructure industry as the first official industry standard certification for those working within the network cabling sector. It's the must-have certification for all those working within the sector and is endorsed by the sector's major organisations. The CNCI® certification is perfect for Service Leavers, combining the **ten day program** with a further **ten day work placement** with one of the major installation companies with the potential for employment.

Program Overview

The Certified Network Cable Installer (CNCI®) resettlement program is for Service Leavers wishing to demonstrate the highest levels of knowledge, skills, expertise and competency in network cabling infrastructures and offers a real opportunity to gain employment.

It's a comprehensive program that blends a perfect mix of theoretical study and practical installation, testing and survey exercises providing the right level of knowledge and skills for both copper and fibre cable installation practices.

Official CNCI® certification also provides two industry recognised Level 3 BTEC qualifications and proves that an individual is qualified to undertake cable installation projects to the highest possible calibre whilst working to the current industry standards including BS EN, TIA and ISO, and following the latest codes of best practice. During the program learners will also have access to current standards for reference purposes.

The program is endorsed by major installation companies, manufacturers, industry associations and consultants knowing that it provides the right level of technical knowledge, competence and confidence to the industry whilst demonstrating capability and credibility. Plus, CNCI® certification is now being specified as a must-have certification on tender documentation, ensuring installation teams are certified before being able to work on major new build projects.

This program is a must for Service Leavers who are looking to enter a potentially rewarding career with recognised qualifications and certification. There is also further opportunity to progress as CNet Training are the originators of The Global Digital Infrastructure Education Framework that provides further education programs that map to actual career progression within the industry.

Resettlement Program Certified Network Cable Installer (CNCI®)

20 DAY PROGRAM

Split into:

- **5 Days Copper Cabling**
- **5 Days Optical Fibre Cabling**
- **10 Day Work Placement**

Combined: 50% Theory 50% Practical

The CNCI® Program consists of 408 pages of rich technical content.

Service Leaver Profile

The CNCI® program is perfect for Service Leavers wishing to acquire the very latest skills and knowledge to enable them to complete both copper and fibre cable installation projects to the highest standards.

Pre-Requisites

No previous experience is required to attend this program.

Program Objectives

Successful Service Leavers will have the knowledge and skills to confidently install, test and certify a complete copper and fibre cable installation. This forms part of the entry level requirement into the Global Digital Infrastructure Education Framework which allows individuals to progress their knowledge, education and skills in-line with their career within these fast moving industries. See www.cnet-training.com to view the Global Digital Infrastructure Education Framework.

Qualification

- Internationally and industry recognised BTEC Level 3 Award Certified Network Cable Installer (Copper)
- Internationally and industry recognised BTEC Level 3 Award Certified Network Cable Installer (Optical Fibre)

Certification

- Official Certified Network Cable Installer (CNCI®) certification
- Use of CNCI post nominal title
- Use of the CNCI® logo
- Fluke CCTT® certification

Certifications are a commitment to life-long 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

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

CNCI® Benefits for Individuals

- Become one of the elite certified network cable installers in the country
- Demonstrate the highest levels of knowledge, skills and expertise in network infrastructure installation
- Plan individual tasks and materials required accurately and with confidence
- Install copper and fibre network cable infrastructure projects on time and within budget, maximising profit potential.

CNCI® Benefits for Business

- Confidence that employees have a full and rounded knowledge in network infrastructure installation, improving competency and productivity
- Reduced time and material wastage - employees can carry out tasks in an accurate and timely manner
- Delivering infrastructure installation projects to the highest quality standards resulting in increased client satisfaction and potential repeat business
- Meet contractual requirements reducing sign off and project hand over times

Certified Network Cable Installer (CNCI®) Topics

CNCI® Copper Cabling

Introduction to Structured Cabling
- Cable media types
- Network topologies
- Categories

LAN Hardware
- PC's, switches, routers

Installing Structured Cabling
- National and International standards
- Interpreting drawings
- Risk evaluation
- Working in containment routes
- Cable installation, cable termination
- Tool and equipment selection

Network Overview
- What is a network?
- Characteristics of a network
- Resource sharing

Signal Theory
- Electrical principals
- DC current principals
- Analogue v. digital

Health & Safety
- Legislation
- Workplace risk
- Electrical safety
- Working at heights
- Working in confined spaces

Standards
- Why standards?
- Standards bodies BSI, ISO, CENELEC, TIA/EIA
- Categories and classes

Fire Stopping
- Why fire stop?
- Types of fire stopping
- Three pillars of fire stopping

Documentation & Labelling
- Floor plans
- Naming conventions
- Symbols
- Records

Testing & Commissioning
- Continuity testing
- Certification/acceptance testing
- Level IV testing
- Saving of results to database
- O&M manuals

Practical
- Patch cord manufacture
- Cable installation
- Termination techniques UTP/STP
- Patch panel/outlet termination, Cat 5e/Cat6

Fluke CCTT (Copper)
- Copper certification (DSX 5000)
- Set up DSX 5000
- Test using DSX 5000
- Troubleshoot
- Test standards/limits
- DSX Diagnostics
- HDTDX and HDTDR

CNCI® Optical Fibre Cabling

Safely Working with Fibre/General Safety
- LED, VCSEL, laser safety
- Fibre preparation hazards, disposal of sharps
- Hazardous substances
- OSP safety, pits, gas detection
- General safety

Network Overview
- History of fibre
- Advantages
- What is a network?
- Benefits of a network
- Topologies
- Why a network?

Hardware
- Cable construction
- LED, VCSEL, laser sources
- Switches, routers, media converters

Theory of Light Transmission
- Optical windows
- Electromagnetic spectrum
- Transmission
- Media choice

Cable
- Construction
- Choice of cable
- Installation practices
- Patchcords

Enclosures
- ODF
- 19" Splice tray
- Slack fibre management, protection, patch field

Standards
- Standards bodies BSI, ISO, CENELEC, TIA/EIA
- Classifications
- Application distances

Connectors
- Connector types
- Functionality
- Density (SFF)

Outside Plant (OSP)
- Fibre backbone in the LAN
- Hardware
- Media choice

Fibre Splicing
- Safety
- Fusion splicer set up and operation
- Singlemode programs
- Multimode programs
- Splicing in patch panels

Fibre Termination
- Safety
- Pigtail manufacture
- Techniques, cold cure, mechanical splice, fusion splice
- End-face inspection techniques

Fluke CCTT (Fibre)
- Tier 1 fibre certification (CertiFibre® Pro)
- Tier 2 fibre certification (OptiFibre® Pro)
- Encircled Flux (EF)
- End face inspection
- Set a reference
- OTDR event types
- OptiFibre® Pro link testing

There are a number of individual practical activities and assignments leading to a group installation project.

> "The CNCI® program provides the perfect opportunity for us to get behind a recognised certification that provides the right level of technical knowledge and gives reassurance to customers. The feedback we have had from our staff that have attended the program has been excellent, even those with lots of experience have found the program challenging and rewarding."
>
> **OPERATIONS DIRECTOR**

> "This is a really good program. The content is comprehensive and relevant. The tutor is capable and knowledgeable with ample onsite experience to offer useful analogies and understands the issues faced by installers in the field."
>
> **PROJECT MANAGER**

> "The CNCI® program is comprehensive and at the depth that we were looking for, it also provides official certification and two level 3 qualifications as evidence of learning."
>
> **COURSE CO-ORDINATOR**
> **THE ROYAL CORPS OF SIGNALS**

Supervisory

CNIT®

Certified Network Infrastructure Technician

BTEC Level 4 Award

Certified Network Infrastructure Technician (CNIT®)

Program Overview

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

The five-day Certified Network Infrastructure Technician (CNIT®) program develops the knowledge and skills required to perform the multifaceted role in delivering complex projects to the site. Learners will greatly enhance their supervisory and management skills through a series of complex case studies mastering the knowledge and understanding required to interpret complex design documentation, the need to establish effective relationships and communications with principle stakeholders and managing the end-to-end project implementation cycle. They will develop an aptitude for logistics and resource management, including team health and safety, dealing with risks and issues that impact project delivery. A certified CNIT® will be undaunted when dealing with escalations and problem resolution within a strategic network infrastructure project. The impact to the project delivery of current and emerging networking technologies will also be explored including wireless access, security systems and VOIP.

Learners will gain an in-depth knowledge of technical parameters for cable testing and will demonstrate confidence when dealing with escalations from installers undertaking cable testing. Experience will also be gained in the management of test records using cloud-based applications, from cable testing through to the delivery of warranty certificates to the customer.

On successful completion, learners can demonstrate the highest levels of knowledge, competency and confidence in supervising and delivering complex infrastructure projects, demonstrating efficiencies in both time and cost, coupled with a focus on quality and accuracy to achieve project closure on time and within budget.

A certified CNIT® 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.

Following this program, you are encouraged to continue your professional development by advancing your knowledge and skills to gain further official certifications and qualifications by progressing through The Global Digital Infrastructure Education Framework which maps education programs to career advancement throughout the network infrastructure and data centre sectors.

The CNIT® program is classroom-based and led by one of CNet's expert Instructors and is also available via remote attendance.

Certified Network Infrastructure Technician (CNIT®)

5 DAY PROGRAM

Combined:
50% Theory 50% Case Study

Learner Profile

This program is designed for those wishing to extend their knowledge, skills, qualifications and certifications into a wider and more complex project environment with emphasis on enhancing supervisory, leadership and management skills.

Pre-Requisites

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

Program Objectives

Successful learners will have the added supervisory and management skills, knowledge and competency to confidently deliver complex infrastructure projects within site environments.

Program Requirements

Learners are required to bring a webcam enabled laptop or suitable device with unrestricted wireless internet connectivity, the latest internet browser and suitable applications for reading/ annotating PDFs and editing standard office documents.

Qualification

- Internationally and industry recognised BTEC Level 4 BTEC Award Certified Network Infrastructure Technician

Certification

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

Additional Awards

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

CNIT® Benefits for Individuals

- Utilise new multi-disciplined supervisory knowledge to manage people and tasks confidently and competently
- 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

- Added supervisory skills provides the ability to realise cost efficiencies through effective planning and manpower utilisation
- 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

Certified Network Infrastructure Technician (CNIT®) Topics

CNIT®

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

Fundamentals of Network Architecture
- Networking protocols
- Ethernet
- Network architecture
- Active network devices
- 3 layer network topology
- Bandwidth demand
- Intelligent building infrastructure
- Internet of Things (IoT)
- Wireless network standards
  - 802.11 variations
  - IEEE standards
  - Frequency bands
  - Channel overlap
- Power Over Ethernet (PoE)

Compliance
- National/international standards
- Legislative requirements
- Good practice
- BS EN 50173 series
- BS EN 50174 series
- Other supporting BS EN standards
- Construction products regulations
- The approach to implementing standards

Design Documentation
- Active network design drawings
- Inside plant drawings
- Outside plant drawings
- Network equipment room design
- Bill of materials
- Patch lists
- Rack face layout

Health and Safety
- General requirements
- CDM requirements
- Permits and cards
- Legal requirements
- Risk
  - Identification
  - Evaluation
  - Mitigation
- Risk assessments and method statements
- Tool box talks

Network Implementation Management
- Outside plant
  - Manholes and building entry points
  - OSP cable run-out list
  - Material call off
  - Task planning
- Inside plant
  - Pathways and containment systems
  - Material call off
  - Task planning
- Quality Assurance

Fire Safety
- Regulations
- Compartmentation
- Fire stop rated materials
- Construction Product Regulations (CPR)

Test Procedures and Escalations
- Certification Vs qualification
- Warranty requirements
- Testing principles
- Test standards
- Copper cabling
  - Custom setup
  - Channel testing
  - Requirements for PoE
  - Dealing with test failure escalations
- Optical fibres
  - Loss budgeting
  - Passive optical networks
  - Dealing with test failure escalation
  - Certification

OEM Software Project Structure
- Complex project structure
- Project creation
- Importing test results
- Cloud access
- Re-certification

Change Control
- MACs
- Evaluating impacts on:
  - Cost
  - Time
  - Material

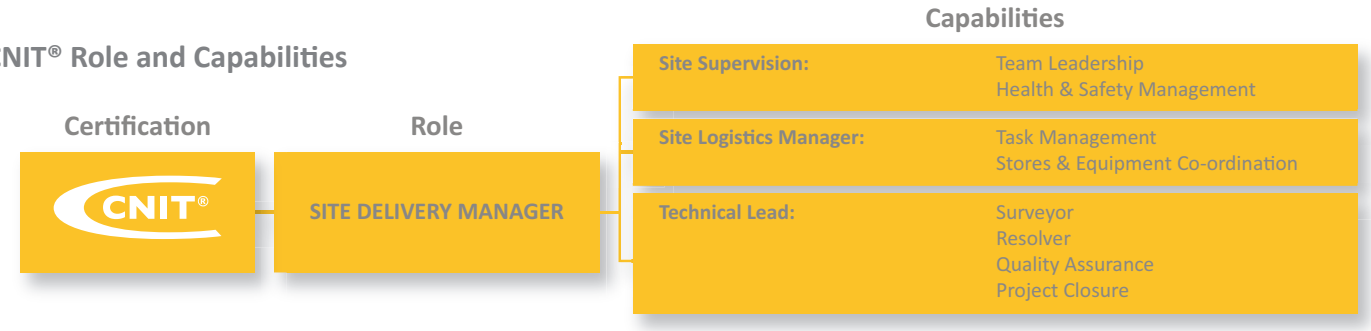
Project Closure
- Red-line drawings
- Certification
- Site closure

Pre-Class Study

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

CNIT® Role and Capabilities



Certified Integrated Infrastructure Technician (CIIT®)

Program Overview

Develop a "smart hands" approach to infrastructure delivery and gain a comprehensive knowledge of a range of intelligent devices that support smart building technical architecture.

The Certified Integrated Infrastructure Technician (CIIT®) program develops knowledge and practical skills required to deliver network infrastructure projects that include the installation and commissioning of intelligent network devices. It's a comprehensive five-day program perfect for those with at least two years of verifiable experience within the network infrastructure sector, or relevant qualifications and certifications in a wider project environment.

A certified CIIT® 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.

Learners will explore the effect of bandwidth demand on the network based on the operating parameters of a range of intelligent devices. In addition, the effects of power demand by Power over Ethernet (PoE) devices on the cable infrastructure will also be addressed.

Practical hands-on sessions are incorporated throughout this program, focusing on PoE network equipment architecture. Learners will install smart devices including wireless access points, AV systems, CCTV cameras and access control systems, and will be responsible for interpreting manufacturer's instructions to mount equipment correctly and in a position that optimises the operational function of the device. They will connect each device to the structured wiring network, prove connectivity and maintain as-fitted documents as they expand the infrastructure.

Learners will also configure smart devices using the system's graphic user interface and carry out tasks from a technical requirements document including activating switch ports for POE and LAN connections, adopting devices into service, creating device identifications and assigning IP addresses. Some common features and settings of devices will also be explored.

Following this program, you are encouraged to continue your professional development by advancing your knowledge and skills to gain further official certifications and qualifications by progressing through The Global Digital Infrastructure Education Framework which maps education programs to career advancement throughout the network infrastructure and data centre sectors.

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

Certified Integrated Infrastructure Technician (CIIT®)

5 DAY PROGRAM

Combined:
30% Theory 20% Case Study 50% Practical

Learner Profile

This program is designed for those wishing to extend their technical knowledge, further develop practical skill sets, with an aim to achieve a broader technical level capability, supported by professional qualification and certification.

Pre-Requisites

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

Program Requirements

Learners are required to bring a webcam enabled laptop or suitable device with unrestricted wireless internet connectivity, the latest internet browser and suitable applications for reading/ annotating PDFs and editing standard office documents.

Program Objectives

Successful learners will have the knowledge, competency and confidence to install and commission Smart Building technology devices.

On successful completion, learners will demonstrate the highest levels of technical skills and capability when installing wireless access devices, AV systems, CCTV cameras and access control systems.

Qualification

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

Certification

- Official Certified Integrated Infrastructure Technician (CIIT®) certification
- Use of the CIIT post nominal title
- Use of the CIIT® logo
- Use of the official Certified Integrated Infrastructure Technician (CIIT®) Digital Badge

Certifications are a commitment to life-long 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

- Continual Professional Development (CPDs)

CIIT® Benefits for Individuals

- Develop an increased technical knowledge and capability
- Enhanced technical capability, able to deliver multi-disciplined projects
- Greater potential for variety and enhanced job satisfaction
- Industry recognised qualification and official certification

CIIT® Benefits for Business

- Investment in team development, improves morale and job satisfaction leading to greater staff loyalty
- Enhanced delivery portfolio, leading to greater opportunities when tendering for projects
- Take control of normally external dependencies
- Realise cost savings through greater efficiencies

Certified Integrated Infrastructure Technician (CIIT®) Topics

Role of the CIIT
- Understand "intelligent buildings and technologies"
- Select and prepare equipment for installation
- Install terminal equipment
- Commission terminal equipment
- Troubleshoot installations

The Internet of Things
- Acronyms and definitions
- Building management systems
- Smart buildings/smart cities/smart homes
- Network convergence

Compliance
- Codes and regulations
- National/international standards
- Industry best practices
- Service warranties

Power over Ethernet
- Concept
- PoE standards and power ratings
- Power considerations and media selection
- PoE injection devices

Virtual Local Area Networks
- VLAN structure
- Planning the VLAN
- Switch configuration

Health and Safety
- Applicable legislation
- Risk associated with the installation of AV equipment
- Safe working practices
- Risk assessments

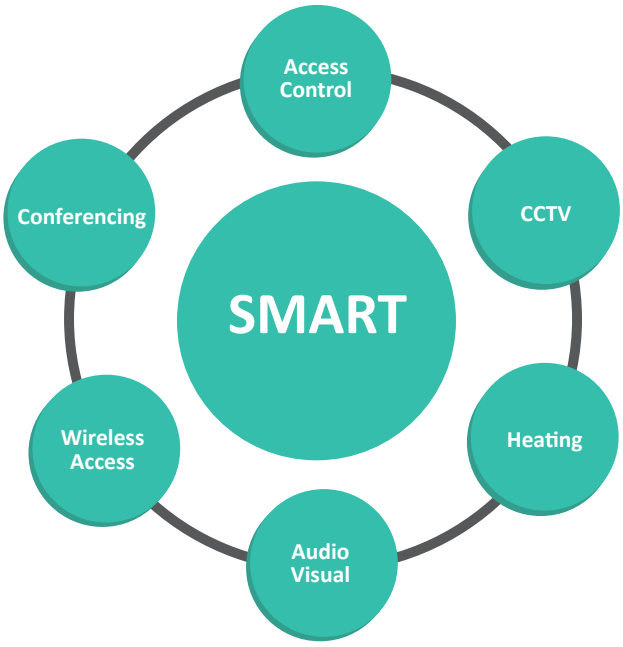
IT Networks
- Network characteristics
- Ethernet
- Network structure
- LAN architecture
- Bandwidth

Fixing and Fastening IT Networks
- Pre-installation considerations
- Video walls
- Wall mount brackets
- Ceiling mount equipment

Understanding Intelligent Architecture
- Access control
- CCTV infrastructure
- Wireless access networks
- Audio visual networks
- PoE network - power and bandwidth considerations

Practical Installation Tasks
- Access control devices
- CCTV camera systems
- Wireless access points
- Audio visual systems
- PoE network switches
- Configure devices
- Troubleshoot network failures

There is a final case study which challenges learners to plan and prepare their practical installation tasks.



Certified Outside Plant Technician (COPT®)

Program Overview

Fibre To The Everything (FTTx), learn how to construct high capacity, high quality external fibre optic networks to meet the demand of smart technologies of the future.

Big data is getting bigger, the development of smart technology devices and the concepts of the Internet of Things (IoT), smart homes, smart buildings and smart cities are driving a significant demand for wider network accessibility. Improvements in wireless technology and the increased deployment of wireless access points along with the rollout of small-cell technology (5G) aims to meet the growing demand for access. Underpinning all of this, as well as the UK government strategy for a 'full fibre broadband' access, is the need for a significant growth in the national fibre optic network structure.

The five-day Certified Outside Plant Technician (COPT®) program is a comprehensive program perfect for those with 2-3 years' experience within network infrastructure who wish to extend their knowledge, practical hands-on skills, qualifications and certifications into deployment of fibre optic connectivity in the external environment.

Learners can take their existing network cabling knowledge and skills to the next level by gaining a valuable insight into external fibre network distribution strategies, infrastructure components and installation methods. Passive Optical Networking (PON) features heavily as the primary delivery technology for fibre broadband to the home. Methods used for distribution will also feature, exploring the benefits and rationale behind the choice to distribute services underground or overhead.

Focused practical hands-on sessions are incorporated throughout this program, including the implementation of in-line splicing, high fibre-count distribution, Multi Dwelling Unit (MDU) cabinet installation and customer connection drops. Blown fibre practices also feature.

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/service portfolio. A COPT® will be undaunted when dealing with complex external fibre networks, able to rationalise the network structure and understand the functions of installed components.

A certified COPT® 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.

Following this program, you are encouraged to continue your professional development by advancing your knowledge and skills to gain further official certifications and qualifications by progressing through The Global Digital Infrastructure Education Framework which maps education programs to career advancement throughout the network infrastructure and data centre sectors.

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

5 DAY PROGRAM

Combined:
30% Theory 70% Practical

Learner Profile

This program is designed for individuals experienced within the network cabling installation environment wishing to extend their hands-on practical skills, knowledge, qualifications and certifications in relation to fibre optic technology and infrastructure in the external environment.

Pre-Requisites

Two to three years experience of working within the network infrastructure sector is required. Successful completion of the Certified Network Cable Installer (CNCI®) program would be advantageous. If you would like to discuss your experience or suitability for this program please contact us.

Program Objectives

Successful learners will have the knowledge and practical skills to confidently install, test and certify fibre optic installations in the external environment.

Qualification

- Internationally and industry recognised BTEC Level 4 Award in Certified Outside Plant Technician

Certification

- Official Certified Outside Plant Technician (COPT®) certification
- Use of the COPT post nominal title
- Use of the COPT® logo
- Use of the official Certified Outside Plant Technician (COPT®) Digital Badge

Certifications are a commitment to life-long 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

- Continual Professional Development (CPDs)

COPT® Benefits for Individuals

- Further develop broader fibre knowledge and skills to gain greater opportunities in the industry
- Undertake work with much higher fibre counts using different termination techniques, building confidence with experience
- Increased technical knowledge and wider understanding of fibre network complexity

COPT® Benefits for Business

- Develop a broader installation capability, increasing business opportunities
- Have the assurance that you are developing a capable and reliable workforce, encouraging independence and reducing cost of failure
- Be confident that with greater network knowledge, your technicians can be more engaging with your customers, able to establish good working relationships and promoting future growth

Certified Outside Plant Technician (COPT®) Topics

COPT® Content

Role of the COPT®

- Planning external plant
- Construction of external pathways
- Working in the OSP environment

Regulations, Standards, Codes and Industry Best Practices

- Applicable BSEN Standards
- New Roads and Streetworks Act 1991
- Working in Confined Spaces
- Working at height

Fundamentals of Outside Plant Pathways Underground

- Route planning
- Pit and chamber construction
- Ducts and sub-ducts
- Building entry methods
- Blown fibre tubing
- Pathway security
- Installation methods

Fundamentals of Outside Plant Pathways Overhead

- Route planning
- Telegraph poles and other support structures
- Route stability
- Environmental clearances
- Wayleaves and pole sharing
- Pole route construction
- Installation practices

Passive Optical Networks

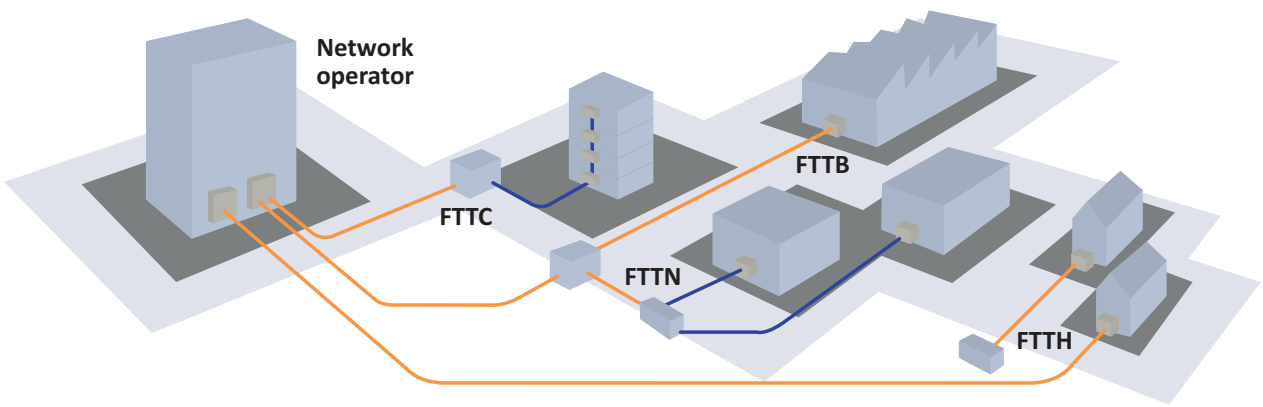
- Types; GPON, EPON, GEPON
- Wavelengths and bandwidth
- PON architecture
- PON components
- PON distribution methods

Testing External Fibre Optic Networks

- Tier 1 and Tier 2 testing requirements in the OSP environment
- Effects of passive splitters
- PON test methodology
- HD/TDR test functionality

Fibre To The Everything (FTTx)

- Fibre to the node
- Fibre to the curb
- Fibre to the building
- Fibre to the antenna
- Fibre to the home



Design

CNIDP®

Certified Network Infrastructure Design Professional

BTEC Level 5 Professional Award

Certified Network Infrastructure Design Professional (CNIDP®)

Program Overview

Learn how to complete a detailed campus network design project and deliver this to the market via an effective tender response.

The eight-day Certified Network Infrastructure Design Professional (CNIDP®) is a full and comprehensive program that equips network infrastructure professionals with the knowledge, skills and confidence to deliver complex infrastructure design projects from inception through to customer hand-over.

The importance of collaborative working with key stakeholders is also emphasised to ensure that the optimal internal and external network infrastructure solutions are delivered, offering flexibility and resilience across a wide range of services, ensuring that network performance is maximised to meet the customer's specified Key Performance Indicators (KPIs).

The core part of this program, the Certified Network Infrastructure Design (CNID®), explores the complex issues involved when designing whilst planning for both Inside Plant (ISP) and Outside Plant (OSP) network infrastructures examining the role of the designer and the multitude of disciplines required to deliver a multifaceted design to meet the customer requirements. Learners will benefit from understanding the design life cycle (from concept to design completion), including the analysis of the customer needs, the site survey process and detailed structure of a final design document.

The professional part of this program, the Certified Network Infrastructure Design Professional (CNIDP®), is designed to significantly elevate the knowledge and skills of the learner within the project delivery life cycle. The program explores the complex issues involved in completing a response to a Request for Quotation (RFQ) or Invitation to Tender (ITT).

Learners will benefit from gaining an understanding of all aspects of the tendering process from RFQ/ITT through to Tender award, and will understand the importance of the bid evaluation process and appreciate the need for thorough, detailed and accurate submittals to the client's project team.

Elements such as calculating accurate project delivery costs, creating comprehensive implementation plan and handover criteria will be examined in detail and provide a thorough overview of all elements involved in producing a successful tender response document.

A certified CNIDP® 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.

Following this program you are encouraged to continue your professional development by advancing your knowledge and skills to gain further official certifications and qualifications by progressing through The Global Digital Infrastructure Education Framework which maps education programs to career advancement throughout the network infrastructure and data centre sectors.

The CNIDP® program is classroom-based and led by one of CNet's expert Instructors and is also available via remote attendance.

Certified Network Infrastructure Design Professional (CNIDP®)

8 DAY PROGRAM

Split into:

- 5 Day Core Unit (CNID®)
- 3 Day Professional Unit (CNIDP®)

Combined: 40% Theory 60% Practical

The CNIDP® Program consists of 172 pages of rich technical content.

Learner Profile

This program is designed for telecommunications and data communications engineers within the network cabling design and installation environment, and those wishing to extend their skills, knowledge, qualifications and certifications in relation to the planning and design of cable systems within different environments. Learners will have sound knowledge of copper and fibre optic cabling infrastructure and awareness of networks, inside plant and outside plant. They will also have an understanding of how relevant standards are applied to design.

Pre-Requisites

A minimum of five years experience of working in the network infrastructure sector is required with at least two years project delivery experience, preferably in an installation management or infrastructure design role. In addition, knowledge of applicable industry standards would be advantageous. If you would like to discuss your experience or suitability for this program please contact us.

Program Objectives

Successful learners will gain in depth knowledge and supporting skills to confidently deliver detailed design documentation and the process of evolving a customer Statement of Requirement (SOR) into an accurate and successful tender response document. Learners gain an understanding of the importance of national and international standards and can confidently apply them to design projects. Learners will also know how the tender document is processed and the assessment criteria involved.

Program Requirements

Learners are required to bring a webcam enabled laptop or suitable device with unrestricted wireless internet connectivity, the latest internet browser and suitable applications for reading/annotating PDFs and editing standard office documents.

Qualification

- Internationally and industry recognised BTEC Level 5 Professional Award Certified Network Infrastructure Design Professional

Certification

- Official Certified Network Infrastructure Design Professional (CNIDP®) certification
- Use of CNIDP post nominal title
- Use of the CNIDP® logo

Certifications are a commitment to life-long 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

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

CNIDP® Benefits for Individuals

- Make effective design decisions based on detailed client requirements that demonstrates compliance with national and international standards
- Deliver detailed drawings that accurately depict network infrastructure components
- Generate a precise bill of materials detailing all infrastructure material requirements by type and quantity, including complex cost calculations
- Specify the requirements for project documentation in support of progression and closure

CNIDP® Benefits for Business

- A right-first-time approach that is technically accurate in all aspects
- Confidence that design decisions are clearly represented enabling the prospective client to assess technical compliance with the statement of requirements
- Costs are clearly and accurately communicated to the prospective client mitigating the risk of variations and change requests during implementation
- Project design documents clearly outline the implementation and closure processes ensuring a smooth transition from installation to operations allowing timely completion and hand over to customer

Certified Network Infrastructure Design Professional (CNIDP®) Topics

Core Unit

Design Principles
- Assess requirements
- Information gathering
- CDMQ
- Constraints
- Capacity planning

Standards
- Standards organisations
- Cabling standards
- Installation standards
- Electrical standards
- Network and application standards
- Building Information Modelling (BIM)

Spaces & Working Areas
- Building Entrance Facility (BEF)
- Main Equipment Room (MER)
- Building Distributor (BD)
- Floor Distributor (FD)
- Horizontal/work area distribution

Site Survey
- Site survey process
- Greenfield and brownfield impacts
- Formulation of site survey report

Cabling Sub-systems (ISP & OSP)
- OSP cabling
- Backbone cabling
- Horizontal cabling
- Network cabling

Network Architecture
- Ethernet
- VoIP
- CCTV
- Wireless
- Access control
- Environmental management
- Fire alarms

Pathways & Containment
- Cable distribution systems
- Raised access floor
- Confined spaces
- OSP cable duct systems

Fire Stopping
- Types & specifications
- Mechanical and non-mechanical
- Regulations and testing

Bonding & Earthing
- Regulations
- Protective Earth (PE)
- Equipotential bonding
- Electrical and UPS

Test & Commission Specification
- Commissioning process
- Certification test methods
- Testing standards

Professional Unit

Understand the Design Process
- Roles of the design team
- Design stages
- Contracts
- Tools and traits for success

Customer Requirements Assessment
- Conducting customer interviews
- Identifying key stakeholders
- Needs analysis
- Scope, plan and schedule

ITT/RFQ Development
- RFP/RFQ objectives and structure
- Formulation of RFP/RFQ
- Scope review
- Bid submission
- Change management

Bid Evaluations & Contract Negotiations
- Bid evaluation techniques
- Shortlist interviews
- Contract negotiations
- Contract award

Project Execution
- Project delivery cycle
- Contractual and professional obligations
- Project scope and schedule
- Quality assurance/change management
- Installation and test sequences
- Communication plan
- Manage stakeholder expectations

Administration, Documentation & Plans
- Identification systems
- Test results and reports
- As-built documentation
- Hand-over process
- Warranty compliance

Commissioning & Closure
- Commission and test sequence
- Test results and documentation
- Snag/punch list process
- Customer handover
- Customer training
- Project closure process

Throughout this program learners will work on an individual campus based case study.

Management

CTPM®

Certified Telecommunications Project Management

BTEC Level 4 Professional Award

Certified Telecommunications Project Management (CTPM®)

Program Overview

Add significant value to project delivery through a high-quality structured project management process that is standardised, repeatable and reliable.

Good project management benefits from a structured approach to project delivery, with clearly defined roles, a structured life-cycle and supporting processes. Repeatability of the project process speeds up the project initiation phase ensuring stakeholders and teams clearly understand expectations allowing projects to be delivered ahead of time and under budget.

The Certified Telecommunications Project Management (CTPM®) 30-hour distance learning program equips learners with the skills to implement a cohesive risk management process, enabling potential risks and issues to be identified and appropriate actions to be taken to mitigate or manage them.

CTPM® is based on the global standard for project management, the PMI's PMBOK® and adds technical input from programs within The Global Digital Infrastructure Education Framework. This combination delivers a unique non-generic project management education program designed specifically for the real-world of telecommunications design, planning and installation. It consists of nine learning modules covering the five processes of the PMBOK®.

CTPM® is an asynchronous, distance learning program with Instructor support, delivered on CNet's learning management system.

- Project quality management - what do your customers actually want?
- Project risk management - what can possibly go wrong?
- Project scope management - what are we delivering? And more importantly, what are we NOT delivering?
- Project human resource management - the right people, with the right tools, fully trained and working together safely; easy
- Project integration management - bringing it all together
- Project time management - what comes first and what comes last?
- Project cost management - how will you ensure that you come in on budget?

Certified Telecommunications Project Management (CTPM®)

30 HOURS DISTANCE LEARNING

Learner Profile

This unique distance learning program is targeted at individuals looking to improve the overall performance of their telecommunications and data centre projects. Suitable for those with experience of telecommunications planning, installation and maintenance within a data centre environment, the program addresses how to successfully design, develop, execute and close a project.

Pre-Requisites

Experience within data centre operations or management or telecommunications planning, installation and maintenance.

Program Objectives

Learners will discover how to develop a project initiating process and create, explain and execute a project planning process. They will also have the confidence to implement measures to monitor and control it and have the ability to carry out a project closing process.

Program Requirements

As a distance learner, you will also need a suitable computer with internet connection, together with sufficient IT competence to make effective use of word processing, internet and email.

Qualification

- Internationally and industry recognised BTEC Level 4 Professional Award Certified Telecommunications Project Management

Certification

- Official Certified Telecommunications Project Management (CTPM®) certification
- Use of CTPM post nominal title
- Use of the CTPM® logo
- Use of the official Certified Telecommunications Project Management (CTPM®) Digital Badge

Additional Awards

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

CTPM® Benefits for Individuals

- Provides portable knowledge, skills, techniques and tools in order to be more successful in managing projects and demonstrates to your employer that you have the desire and commitment to learn and improve
- It enhances career development prospects by achieving a recognised project management qualification
- Provides an independent measure of an individual's project management knowledge and competence

CTPM® Benefits for Business

- It develops an understanding of project goals, objectives and benefits before committing significant resources to ensure that only projects which are expected to provide a Return On Investment (ROI) or financial margin are committed to
- It ensures that projects proceed effectively through all essential phases, from concept through to completion
- It provides a rigorous approach to defining a realistic time-scale and budget for completion of the project

CNet Training

Customer Focused ▶▶
Quality Driven ▶▶▶▶

Data Centre Fundamentals

16 HOURS DISTANCE LEARNING

Program Overview

De-mystify the complex world of data centres.

Gain a structured overview of the data centre environments, the role of a data centre and key operational aspects.

Data centres play such significant roles in our business and personal lives, yet not many people really know what they are. Often referred to as “the cloud” where our data is stored and processed, they are much more than this; they power the internet giving us the ability to pay bills online, access our emails, obtain money from ATM machines, watch movies, communicate around the world and to carry on what is now considered a normal, fiercely technological lifestyle.

This distance learning program has been designed to help de-mystify the complex world of data centres. It provides an overview of what data centres are, what they do and why we need them. Key aspects relating to basic design and design philosophies are also examined and the essential considerations of data centre management such as operational processes, energy management and facility management are explored along with their relationships to overall business strategy. The data centre sector as a whole is also explained including the value of the sector today, the significant growth it has experienced to date and how this will continue in the future.

This is a distance learning program, study can be undertaken at your convenience over a period of time. Once booked, an online link with a password is sent to you which unlocks the relevant material for you to start your study.

Data Centre Fundamentals

16 HOURS DISTANCE LEARNING

Learner Profile

This program has been designed for individuals who are either new to the data centre sector (technicians with limited experience or exposure to data centre facilities) or for those who sell products and services to the data centre sector. If you would like to discuss your experience or suitability for this program please contact us.

Pre-Requisites

There are no specific pre-requisites for this program however some awareness of the data centre industry would be advantageous.

Program Objectives

To provide an overview of the data centre sector, the functional requirements of the data centre facilities, the key aspects of data centre working infrastructure and their management and the facilities relationship to the delivery business strategy.

Program Requirements

As a distance learner, you will also need a suitable computer with internet connection, together with sufficient IT competence to make effective use of word processing, internet and email.

Certification

- CNet Training Certificate
- Use of the official Data Centre Fundamentals Digital Badge

Data Centre Fundamentals Topics:

What is a Data Centre?

- Define a data centre
- Identify the main data centre types
- Identify the business service options
- Emerging delivery and future demands

The Role and Objectives of a Data Centre

- Driving factors for a data centre
- Data centre standards
- Data centre availablitiy models and considerations
- Location and building considerations

Design Overview

- Criticality and availability considerations
- The four key constraints (4C’s) - Power Cooling, IT Infrastructure and Space

Managing a Data Centre

- Regulations, best practices and operational processes
- Move, adds and change processes
- Efficient energy management
- Decommissioning processes
- IT & physical security

The Data Centre Industry and Market

- The size of the market
- Market drivers and trends
- Powering the internet

AVAILABLE IN ENGLISH & SPANISH

Technician

CDCTP®

Certified Data Centre Technician Professional

BTEC Level 4 Professional Award

Certified Data Centre Technician Professional (CDCTP®)

Program Overview

Excel in a highly skilled and efficient technical team charged with optimising the operational capability and productivity of the data centre to meet the evolving demands of the business.

Ensuring zero downtime within the mission critical data centre environment involves employing highly competent and confident technicians who consistently demonstrate unrivalled technical knowledge and skills. High quality technicians are increasingly seen as a vital component to the smooth running of any data centre operation.

The five-day Certified Data Centre Technician Professional (CDCTP®) program is for individuals working within mission critical data centre facilities. It explores the wide range of subjects relevant to the data centre technician including a detailed breakdown of the data centre operating environments and the four key constraints to its operational effectiveness (power, cooling, IT and space), the necessary operational policies, procedures and compliance based on legislation, standards (national & international) and codes of conduct. During the program, learners will be provided a valuable opportunity to access the latest industry standards.

Certified technicians can foresee potential causes of failure honing an in-depth understanding of facility components and their operating parameters. In addition, technicians can identify, analyse, and remedy problems as they occur, quickly, decisively and accurately, avoiding potential high cost repairs and the risks associated with loss of service.

Following this program, you are encouraged to continue your professional development by advancing your knowledge and skills to gain further official certifications and qualifications by progressing through The Global Digital Infrastructure Education Framework which maps education programs to career advancement throughout the network infrastructure and data centre sectors.

> “Amazing from beginning to end. Made me a better overall data centre technician.”
>
> DATA CENTRE TECHNICIAN

Certified Data Centre Technician Professional (CDCTP®)

5 DAY PROGRAM

Split into:

- 3 Day Core Unit (CDCT®)
- 2 Day Professional Unit (CDCTP®)

Combined: 70% Theory 30% Practical

You must successfully complete the (CDCT®) core unit before moving on to the (CDCTP®) professional unit.

Learner Profile

This program has been specifically designed for individuals wishing to acquire skills of the highest calibre in order to carry out their technical data centre duties. CDCTP® certification is beneficial to personnel who contribute to the day-to-day smooth operation of the mission critical facility.

Pre-Requisites

Experience of working within a data centre environment is essential. If you would like to discuss your experience or suitability for this program please contact us.

Program Objectives

CDCTP® certified individuals possess the knowledge, expertise and skills that are considered essential in ensuring that a data centre facility is operated and maintained to the highest possible standards.

Program Requirements

Learners are required to have a webcam enabled laptop or suitable device with unrestricted wireless internet connectivity, the latest internet browser and suitable applications for reading/annotating PDFs and editing standard office documents.

Qualification

- Internationally and industry recognised BTEC Level 4 Professional Award Certified Data Centre Technician Professional

Certification

- Official Certified Data Centre Technician Professional (CDCTP®) certification
- Use of CDCTP post nominal title
- Use of the CDCTP® logo
- Use of the official Certified Data Centre Technician Professional (CDCTP®) Digital Badge

Certifications are a commitment to life-long 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

- Continual Professional Development (CPDs)

CDCTP® Benefits for Individuals

- Understands all aspects of data centre operations including technical and physical constraints. Recognises the dependencies on other work streams, can plan work efficiently and avoid unnecessary delays
- Understands the benefits of carrying out physical inspections of data centre components as a matter of routine. Adopts a proactive attitude and can identify potential equipment failures before they occur
- Understands the need to adhere to codes, legislation and standards and is focused on first-time compliance, avoiding unnecessary rework
- Recognises the roles of others within the facility and can improve business processes through effective contribution to the right people and at the right level

CDCTP® Benefits for Businesses

- Have a technical team equipped with a broad knowledge data centre functions and operational processes enabling the business to function with optimum efficiency
- Significantly reduces the risk of failure by having knowledgeable and proactive technical staff capable of identifying signs of potential failure
- Having a technical team with a broad knowledge of codes, legislation and standards instils confidence that the data centre can operate effectively whilst consistently meeting legal and contractual obligations
- Develop a technical team that is cognisant of the roles of their peers and managers ensuring efficient and timely passage of accurate information and thereby increasing productivity

Certified Data Centre Technician Professional (CDCTP®) Topics

Core Unit

Data Centre Fundamentals
- What is a data centre?
- Understanding the basic design requirements
- Availability and resilience measures and practices

Compliance
- Codes & regulations
- National and international standards
- Industry guidelines and best practices
- Certification and accreditation

The Physical Infrastructure
- The Four Key Environments (Power, Cooling, IT Connectivity and Space)
  - **Power**
    - Power infrastructure (data centre electrical distribution)
  - **Cooling**
    - Cooling infrastructure and airflow management
    - Overview of different cooling system technologies
  - **IT Connectivity**
    - Active network
      - Equipment configuration
      - Servers, software and services
      - Storage infrastructure
      - Data centre networks
      - Distribution options
    - Physical Network
      - IT cabinets and frames
      - Cable containment
      - Data centre topologies
      - Structured wiring
      - Fibre optical cabling
  - **Space**
    - Relationship between white and grey space environments
    - Physical security and access control

Working in the Data Centre
- Safety Consideration
  - Risk assessment and method statements
  - Environmental health and safety
  - Personal protective equipment
  - Life safety systems (fire detection and suppression)
- Task Preparation
  - Understanding the operation structure
  - Operational processes and procedures
  - Move, Adds and Changes (MACs)
  - Decommissioning
  - Operational measuring and monitoring
- Asset Management
  - Management tools, administration
  - Change management

Data Centre Maintenance
- The need for maintenance
- Maintenance strategies
  - Preventative maintenance
  - Predictive maintenance
  - Reliability centred maintenance
  - Condition-based maintenance
- Power maintenance
- Cooling maintenance
- IT connectivity maintenance

Professional Unit

Advanced Power
- Electrical safety
- Power infrastructure systems (distribution path and components)
- Back-up power infrastructures
- Earthing and bonding
- Measuring, monitoring and routine checks
- Benchmarking and data centre metrics

Advanced Cooling
- Understanding the need for cooling
- Data centre cooling architectures and systems
- Air cooling
- Economiser modes
- Liquid cooling
- Chilled water plant
- Cooling towers
- Measuring, monitoring and routine checks
- HVAC efficiency and Power Usage Effectiveness (PUE) relationship

There are a number of group and individual case studies throughout this program.

Design

CDCDP®

Certified Data Centre Design Professional

BTEC Level 5 Professional Award

Certified Data Centre Design Professional (CDCDP®)

Program Overview

Create a comprehensive data centre design that supports the critical needs of the business, examining in-depth the key constraints of data centre functionality to deliver a balanced, efficient and sustainable solution.

The Certified Data Centre Design Professional (CDCDP®) program is proven to be an essential certification for individuals wishing to demonstrate their technical knowledge of data centre architecture and component operating conditions.

This five-day program has a comprehensive agenda that explores and addresses the key elements associated with designing a data centre. It teaches best practice principles for the design, construction and operation of computer rooms and data centre operational support facilities. The program also addresses the importance of accurate interpretation of detailed customer requirements at the planning stage to ensure that the business needs remain focal to all decision making.

Learners will also explore the key elements of physical infrastructure, electrical distribution systems, air-conditioning, data cabling and building support systems. The program concludes with a comprehensive case study exercise that guides learners through the design steps from initiation to commission, covering the business decisions, design scope and implementation phases that need to be addressed throughout all aspects of the process.

A certified CDCDP® 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.

Following this program, you are encouraged to continue your professional development by advancing your knowledge and skills to gain further official certifications and qualifications by progressing through The Global Digital Infrastructure Education Framework which maps education programs to career advancement throughout the network infrastructure and data centre sectors.

> “Excellent content. Excellent Instructor, always encouraged participation. Excellent material, well presented, great interaction.”
>
> **IT FACILITIES MANAGER**

Pearson

CPD CERTIFIED
The CPD Certification Service
Certificate no: 0959T1

Certified Data Centre Design Professional (CDCDP®)

5 DAY PROGRAM

Learner Profile
The program will prove beneficial for professionals already designing projects for implementation within a data centre facility, or those looking to advance into the data centre design from associated data centre technical or operational roles.

Pre-Requisites
Experience of working within a data centre environment is essential; preferably with two years experience in a technical IT, operational or facilities role. If you would like to discuss your experience or suitability for this program please contact us.

Program Objectives
CDCDP® certified individuals will possess unrivalled knowledge, expertise and capability to deliver a comprehensive data centre design to meet on-going operational and business needs.

Program Requirements
Learners are required to undertake pre-class study, which is fully supported by an experienced and dedicated online Tutor. Learners are also required to have a webcam enabled laptop or suitable device with unrestricted wireless internet connectivity, the latest internet browser and suitable applications for reading/annotating PDFs and editing standard office documents.

Program Duration
5 day class requiring pre-class study of approximately 20 hours.

Qualification
- Internationally and industry recognised BTEC Level 5 Professional Award Certified Data Centre Design Professional

Certification
- Official Certified Data Centre Design Professional (CDCDP®) certification
- Use of CDCDP post nominal title
- Use of the CDCDP® logo
- Use of the official Certified Data Centre Design Professional (CDCDP®) Digital Badge

Certifications are a commitment to life-long 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
- Continual Professional Development (CPDs)

Certified Data Centre Design Professional (CDCDP®) Topics

CDCDP®

What is a Data Centre?
- The data centre stack
- Types of data centre

The Design Planning Process
- Main design considerations
- Developing a project plan

Scoping the Requirement
- Identifying key stakeholders
- Market and political drivers
- National and international standards
- Availability and resilience classifications
- Introduction to availability models (Uptime Tier, TIA 942-B Rating, BICSI Classes & Syska Hennessy Critical Levels)
- Recommendations for location, size, heights, floor loading, lighting and decor

Whitespace Floor
- National and international standards
- Structural and load requirements
- Recommended floor heights
- Airflow and sealing
- Ramps and access
- Seismic protection
- Slab floor construction considerations

Cabinets
- Requirements of a cabinet
- Security, safety and stabilisation
- Clearance, accessibility and ventilation
- Cable management
- Seismic stability considerations
- Design specifications

Power
- Regulations and codes
- The meaning of N, N+1, 2(N+1) etc.
- Power delivery and distribution losses
- Uninterruptible Power Supply (UPS) options
- Generator considerations
- Power distributions units
- Power distribution to, and in, a rack
- Remote Power Panels (RPPs)
- Emergency Power Off (EPO)
- Estimating power requirements

Cooling
- National and International standards
- Basics of air conditioning principles
- CRAHs and CRACs
- ASHRAE operational parameters
- Under floor plenum approach
- Hot aisle/cold aisle layout principles
- Hot and cold aisle containment
- Psychrometric charts
- Min and max throw distances for under floor air
- Bypass and recirculation
- Airflow management
- Chilled water racks, CO_2, free air cooling

Earthing & Bonding
- Applicable standards
- The terminology of earthing, grounding & bonding
- Equipotential bonding
- Electrostatic Discharge (ESD)
- Functional earths
- The Signal Reference Grid (SRG)

Cable Containment, Management & Protection
- Applicable standards
- Separation of power and data cables
- Administration and labelling
- Types of conduit, trunking, tray, etc available
- Earthing and bonding
- Containment fill ratio
- Underfloor v overhead containment
- Cable management, in and to a rack
- Fire stopping

Delivering the IT strategy
- Data centre equipment
- Functions and protocols, current and future
- Data centre connections
- Cabling requirements
- Cabling standards
- Cabling options
- The impact of 40G and 100G
- The impact of virtualisation

Copper and Optical Fibre Cabling Connectivity
- Cabling standards
- Cable standards, 10GBASE-T, CAT6A, Cat 7A & Cat 8
- Screened vs unscreened cables
- High density patching
- Alien crosstalk
- Copper test requirements
- Design for growth management
- Channel connections
- Connection topologies
- Optical connectors, past and present
- Optical fibre management
- Types of optical cable
- Advantages/disadvantages of pre-terminating cables
- Optical component loss and link power budgets
- Application link loss
- Optical testing requirements
- Pre-terminated cabling

Safety and Manageability
- Local codes and regulations
- Fire safety plan
- ASD and detection systems
- Fire suppression systems
- Fire safety cable requirements
- Security and access control

Commission and Handover
- Benefits of commissioning
- Commission process and test sequence
- Handover process and training
- Lessons learned

Power Review
- Power consumption trends
- Energy availability, security and cost
- Energy challenges facing the data centre

Power Regulations
- Which regulations affect data centres?
- Environmental regulations and pressures
- Energy and environmental programs

Power Basics
- Ohm's law, Joule's law, the Kirchhoff laws
- Electrical parameters
- AC and DC
- Single phase and three phase
- Residual currents
- Harmonics

Power to the Data Centre
- Where does the electricity come from?
- Electrical supply options
- Transformers
- Surge suppression devices
- Costs of electrical power
- Types of tariff available
- Alternate power supply options

Distribution in the Data Centre
- Electrical circuit requirements
- Switching devices
- Power factor correction units
- Automatic and static transfer switches
- Main, feeder, sub-main circuits
- Power distribution units
- Remote power panels
- Final circuits
- Cable and fuse sizing
- Power distribution and associated losses
- TN-S systems
- Energy efficiency

Standby Power
- UPS, components, batteries and redundant systems
- UPS options and considerations
- Static and maintenance bypasses
- Standby generators

Cooling Review
- Data centre limiting factors
- Sources of cooling inefficiencies
- Cooling trends

Regulatory Climate
- Which regulations affect data centres?
- Environmental pressures
- Cooling efficiency
- Design considerations & planning redundancy
- Overview of Computational Fluid Dynamics (CFD)
- Periodic review process

Environmental Parameters
- Standards, NEBS, ETSI, ASHRAE
- Operating environment ranges
- Rate of change
- ASHRAE psychrometric charts
- Humidification systems
- The need for sensors
- Measuring and monitoring

Collecting the Heat
- Cooling system overview
- CRACs and CRAHs
- Maximising existing investment
- Rack v row options
- Dynamics and problems of air flow
- Liquid cooling
- Comparison of high-density cooling
- Available cooling options

Heat Rejection or Reuse
- Heat transfer considerations
- DX systems
- Chilled water CRAHs
- Chiller options
- Adiabatic cooling
- CWS and CHWS plant
- Design considerations
- Free cooling and free - air cooling
- Commissioning maintenance
- Planned preventative maintenance

Energy Use Systems
- Energy efficiency issues
- Layers of inefficiency
- Power system provision
- Cooling system provision
- Understanding areas of improvement

IT Infrastructure
- Extending the operating envelope
- Environment zones
- Accurate IT calculations
- Energy use in the IT equipment
- Software and storage considerations
- Transformation options
- Energy efficient IT equipment

Power Systems
- Energy use in the data centre
- DC power train
- Matching the support to the IT load
- Transformer efficiencies
- UPS & motor efficiencies
- DCiE for modular provisioning
- Maximising the power factor
- Measuring and monitoring
- Infrared inspections
- Planned electrical safety inspections
- Implementing data centre electrical efficiency

Cooling Efficiency
- Cooling a cascade system
- Affinity laws and cooling equation
- CRAC and CRAH efficiencies
- Optimising air-side systems & water-side systems
- DCiE for cooling options
- Diagnostic and site specific monitoring
- Design considerations

Data Centre Metrics
- Where and what can we measure?
- The metric stack
- Metric characteristics
- Current industry metrics (PUE, CUE, WUE, ERE, RCI & RTI)
- Chained value metrics (CADE)
- Proxy metrics (FVER, DPPE, DCeP)

Efficiency Models & Best Practices
- Energy calculations
- Levels of modelling
- Modelling tools
- Sources of guidance
- Effective v Efficient
- The DC language barrier
- The multi-functional team
- Design for efficiency, operability & flexibility
- Industry recognised best practices

Design Management
- Characteristics of project management
- Key project processes
- Identifying and engaging with key stakeholders
- Setting goals
- Prioritisation of activities
- Cornerstones of project management

Managing the Design Process
- What is to be delivered?
- What constraints are there?
- Managing dependencies
- Managing the tribes
- Managing conflict
- Identifying risk
- Risk and issue management
- Change management
- Reporting and communication

Managing the Design Implementation Process
- Project charter and specification
- Risk assessment and management
- Scope management
- Float and critical path
- Human resource management
- Project integration and work breakdown structure
- Time and cost management
- Handover and progressive acceptance

There are a number of group discussions and individual design exercises throughout this program.

Management

CDCMP®

Certified Data Centre Management Professional

BTEC Level 5 Professional Award

Certified Data Centre Management Professional (CDCMP®)

Program Overview

Gain unparalleled knowledge, skills and competency to manage the complex technical environments of a data centre facility and the ability to optimise its effectiveness by driving efficiencies. Create a credible business strategy and apply strong leadership to maximise the operational capability of the data centre whilst continuing to meet the on-going demands of the business.

The five-day Certified Data Centre Management Professional (CDCMP®) is a comprehensive program that investigates the functionality of all elements of a data centre facility and the relationships and dependencies between them, with a focus on maintaining consistent reliability, security and integrity of data and the availability of service.

Opening with a solid grounding in the basic design principles, the program progresses to provide an overview of the physical infrastructure elements, through to an understanding of the project management methodology required to deliver complex data centre projects.

It also explores the efficient management of the often conflicting operational and maintenance demands required of the data centre plant to continuously deliver the business needs. The challenges of regulatory compliance, data centre strategies and audit demands are also thoroughly examined. Real-life case studies are used to demonstrate putting theory into practice.

A certified CDCMP® 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.

Following this program, you are encouraged to continue your professional development by advancing your knowledge and skills to gain further official certifications and qualifications by progressing through The Global Digital Infrastructure Education Framework which maps education programs to career advancement throughout the network infrastructure and data centre sectors.

> “What a fantastic program, great material, great instructor and great in class network. It was good to meet other industry professionals and discuss data centre management practices.”
>
> DATA CENTRE MANAGER

Certified Data Centre Management Professional (CDCMP®)

5 DAY PROGRAM

Program Duration

5 day class requiring pre-class study of approximately 20 hours.

Learner Profile

The program is designed for individuals wishing to enhance their ability to strategically manage, control and improve the operational effectiveness of a data centre environment.

Pre-Requisites

Experience of working within a data centre environment is essential; preferably with two years experience in a technical IT or operations role. If you would like to discuss your experience or suitability for this program please contact us.

Program Objectives

Upon completion, successful learners will have an unrivalled knowledge of how to effectively manage a data centre environment to optimise its effectiveness in a more efficient manner whilst meeting the strategic operational demands of the business.

Program Requirements

Learners are required to undertake pre-class study, which is fully supported by an experienced and dedicated online Tutor. Learners are also required to have a webcam enabled laptop or suitable device with unrestricted wireless internet connectivity, the latest internet browser and suitable applications for reading/annotating PDFs and editing standard office documents.

Qualification

- Internationally and industry recognised BTEC Level 5 Professional Award Certified Data Centre Management Professional

Certification

- Official Certified Data Centre Management Professional (CDCMP®) certification
- Use of CDCMP post nominal title
- Use of the CDCMP® logo
- Use of the official Certified Data Centre Management Professional (CDCMP®) Digital Badge

Certifications are a commitment to life-long 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

- Continual Professional Development (CPDs)

CDCMP® Benefits for Individuals

- The ability to develop a management strategy that aligns with the business operational requirements
- Recognises the need to develop a multi-disciplinary team supporting all operational functions of the data centre
- Can identify the processes within data centre operations that ensure consistent reliability, security and integrity of data and the availability of service.

CDCMP® Benefits for Businesses

- Establish confidence that the data centre manager is competent to strategically manage data centre processes and procedures through continual improvement planning to meet the operational demands of the business
- Confidence that the data centre manager can build a strong team to effectively deliver all operational requirements to ensure maximum service uptime
- Ensures that service levels agreements and key performance indicators are consistently met, to establish and improve customer satisfaction

Certified Data Centre Management Professional (CDCMP®) Topics

CDCMP®

What is a Data Centre?
- Data centre definition
- Data centre options
- Business demands
- Growth and demand challenges

Understanding Basic Design Principles
- Identifying the business need
- Building a business case
- National and international standards
- Site and building considerations
- Tier levels
- Criticality and availability
- Determining data centre capacities

Physical Infrastructure
- Power infrastructure
- Static and automatic transfer switches
- Measuring and monitoring
- Cooling infrastructure
- Cooling management options
- Cable infrastructure considerations
- IT systems and services
- Storage management
- IT security
- Access and security

Implementing Data Centre Projects
- Business case
- The project cycle
- Prioritisation of activities
- Triple constraints
- Customer value
- Quantitative risk analysis
- Rolling wave planning
- Decomposition
- Change management
- Documentation

Managing the Data Centre
- Regulations, standards, processes
- Service management frameworks
- Service life cycles
- OLA, SLA and KPIs
- Process and procedures:
  - Moves, adds, changes
  - Energy efficiency
  - System availability
  - Decommissioning
- Transformation programs
  - Consolidation
  - Virtualisation
  - Cloud computing
  - Relocation
- Data Centre facility management
  - Facility operations
  - Building Management Systems (BMS)
  - Fire safety compliance
  - Fire suppression

Purpose
- The data centre stack
- The key constraints (power, cooling, space and IT connectivity)
- System availability
- Efficiency metrics
- Importance of commissioning
- Importance of capacity management
- Managing initial design principles

Management of Processes
- Introduction to ITIL
- DCO & FM framework
- Key performance indicators (KPIs)
- RACI matrices

Management of People
- Appreciation of different skill-sets
- Creating a multi-disciplinary team
- Constructing a data centre team

Management of Plant
- Management of plant overview
- Power management
- IT environment management
- Cooling management

Energy Efficiency
- Understanding what is attainable and prioritisation
- Efficiency demands
- Efficiency measures
- Validation of processes and procedures

Management of Services
- Management of SLA's
- Data centre service management
- Automated tools
- Activity planning

Business Strategy
- Data centre strategic context
- Strategic planning
- Drivers for the business and IT strategies
- The impact on the data centre
- Aligning IT with the business strategy

IT Strategy
- The link between business and data centres
- IT strategy framework
- Portfolio management
- Execution plan

Supporting Strategies
- Strategic planning processes and techniques
- Supporting strategy examples
  - Power continuity
  - Cooling continuity
  - Finance
  - Fire safety
  - Security and access control
  - Business continuity/disaster recover
  - Cleaning

Legislation and Regulations
- Data protection
- General Data Protection Regulation (GDPR)
- Computer Misuse Act
- Freedom of Information Act
- Cloud service provider legislation
- Electricity regulations
- Electricity at work regulations, national electrical code
- Building and regulations
- Health and Safety
- Environmental legislation

Codes of Practice
- EU code of conduct
- DoE DCEP (Data Centre Energy Practitioner) - Green Grid maturity model

Standards and Accreditations
- National and international standards
- Accreditations
  - Uptime Institute
  - Certified Energy Efficient Data Centre Award (CEEDA)
  - Building Research Establishment Environmental Assessment Method (BREEAM)
  - Leadership in Energy and Environmental Design (LEED) ISO 50001 & 14001

The Audit Process
- What is an audit?
- Defining the business requirement
- What should be audited?
- Audit outcomes
- Potential risk evaluation

Auditing the Data Centre Physical Infrastructure
- Audit guidance
- Site specific activities
- Evaluating the key environments
- Commissioning
- Functional testing
- Trend analysis
- Recommended practices

Performance Audits
- Current industry metrics
- Modelling calculations
- Bin analysis

Environmental Audits
- The need to measure and monitor
- Site specific monitoring
- Energy use and monitoring

Asset Management
- Areas of asset management
- Asset management strategy and life cycle
- Asset management tools

Professional Program Review
There are a number of group and individual management based case studies throughout this program.

CNet Training | a.r.u. Anglia Ruskin University Associate College

Masters Degree in Data Centre Leadership and Management

3 Years Distance Learning

Program Overview

Data centres are complex facilities that are expected to deliver faultless service and financial results in a world of rapidly changing technologies, business pressures and environmental expectations.

In order to achieve this, data centres need highly capable leaders and managers - individuals who are capable of dealing with business complexity and technological change with the knowledge and skills to ensure their teams deliver against consistently challenging objectives.

The Masters Degree in Data Centre Leadership and Management is a unique program, which has been designed in collaboration with the industry to advance data centre professionals worldwide. No other university program offers data centre professionals this high level leadership and management education tailored to the data centre sector.

The program harnesses CNet's unique insight into data centre operations and expertise in business leadership and management. Topics have been selected on the basis of feedback from the industry and data centre professionals who are themselves involved with delivering the program alongside other hand-picked specialists. The content of the Masters is re-written each year to ensure it reflects the constantly evolving nature of the sector.

Delivery of the program is through distance learning, meaning that learners can study at times that are convenient to them. They can also easily communicate with their tutors and each other wherever they are in the world.

Structure

Primarily this three year program is based around supported online distance learning via a learning management system, providing flexibility and complete interaction every step of the way. Learners will be supported by the CNet team, specialist academic staff and industry specialists, all with the aim of creating an enriched shared learning experience. Each year there is an optional Bootcamp in Cambridge, UK for those that can attend.

On average, learners commit the equivalent of approximately 10 hours of study to the program per week during trimester time, however this study can be taken at your own pace and undertaken at a convenient time for you. However, the deadlines that are given for your assessed work are strict and must be met.

The program is run across two learning periods per year. There are two points of entry each year, one in January/February, the other in September. Each module is formally assessed.

Program Requirements

As a distance learner, you will also need a suitable computer with internet connection, together with sufficient IT competence to make effective use of word processing, internet and email.

Masters Degree in Data Centre Leadership and Management

3 YEARS DISTANCE LEARNING

Learner Profile

This Masters Degree is suited to leaders and senior managers working in data centre facilities wishing to form the elite group of worldwide data centre professionals.

Pre-Requisites

This program has been designed for people in leadership and management positions within data centre facilities.

CNet will consider all applications individually, taking into account each applicant's experience and qualifications.

We encourage you to apply if you:

- Work in a data centre facility
- Experience: Have at least two years at middle or senior management level in a data centre context

It would be advantageous if you have a first or second class degree from a UK university, or equivalent from an overseas university.

Those applicants for whom English is not a first language will be expected to demonstrate a certificated level of proficiency of at least IELTS 6.5 or equivalent.

Program Objectives

The aim of this Degree is to unite the existing knowledge and skills of data centre professionals with essential new learning centred around leadership and management within a data centre environment and award a top level degree qualification.

Qualification

- Masters Degree in Data Centre Leadership & Management (MA) - a Level 7 qualification
- Graduates will be invited to a Degree graduation ceremony and can utilise a post nominal title, using the initials MA after their name
- Graduates will also gain the use of the official Masters Degree in Data Centre Leadership & Management (MA) Digital Badge

Price

£6,000 per year (total £18,000)

The fee is VAT exempt.
Scholarships are available through iMasons Scholarships - www.imasons.org

Masters Degree in Data Centre Leadership and Management Content

Year 1 - PG Certification (PGCert)

The first year of the program enables you to develop your expertise in three key themes that are at the heart of any business: leadership, sustainability and financial management. The program starts with an introduction to leadership in the data centre sector, exploring different approaches to leading in a complex and dynamic business. You will then go on to look at issues of sustainability and design, from the business management perspective. Leaders also need a sound understanding of money issues, so financial management is also included coupled with how financial considerations influence you as a leader.

Data Centre Leadership

- Evolution of leadership
- Complexity theory, dynamic organisational environments, strategic alignment in organisations, systems theory
- Emergent leadership theory in dynamic environments
- Internal business environment analysis and organisational dynamics
- Models of strategic analysis
- The role of leaders in fostering cultures of innovation, creativity and change capability in dynamic environments
- Change management

Sustainable Design for High Capacity Data Centres

- Modular data centre design for reliability, scalability, efficiency and sustainability
- Management of "utility" operations like electricity, heating and cooling from a usage, efficiency and cost saving perspective
- Environmental monitoring technologies
- Maximising system utilisation for best efficiency
- Continuous commissioning
- Use of cloud technology to minimise the impact of data centres on the environment

Finance for Decision Making

- Overview of the financial system
- Decision making and problem solving in theory and practice
- Financial objectives and strategies linked to general strategies and environmental circumstances
- Corporate governance issues
- Efficient/inefficient markets and behavioural finance
- Financial risk - types and coping mechanisms
- Relationship between financial risk and expected return
- Cost of capital: WACC and CAPM; Gearing
- Treasury management and control of working capital
- Investment appraisal

Year 2 - PG Diploma (PGDip)

The second year takes your expertise to the next level. You will start off by exploring key data centre issues of infrastructure management, security and disaster recovery, in particular looking from the perspective of the business. To be successful, a data centre business is dependent upon its people, so you will explore human resource management, organisational behaviour and strategies for maximising performance in teams. You will also develop your understanding of decision making, which is particularly important in critical services.

Data Centre Infrastructure Management, Security and Disaster Recovery

- Asset tracking ("Cradle to Grave")
- Change management
- Analysis of virtual/logical systems and how they interact with physical hardware
- Management & resilience high capacity storage in complex data centres (especially related to disaster recovery scenarios)
- Consolidation of resources/locations
- Optimising physical infrastructure (including space management) to enable higher capacity
- Multi-layered monitoring
- Future strategic planning via modelling scenarios
- Physical security & data security
- Virtual digital security (especially in co-location environments)
- Identification of data centre infrastructure risks and vulnerabilities, mitigation techniques and recovery policies
- Governance relating to data protection, safe harbour and other compliance regimes
- Evaluation metrics

HRM and Organisational Capability Development

- Managing human resources for optimal performance
- Organisational behaviour
- Developing and managing structures for continued capability growth
- Managing contractor arrangements and a contingent workforce
- Knowledge management

Decision Making in Critical Services

- Risk identification and mitigation
- Sense-making and management behaviour during critical incidents
- Response to critical incidents and first response management
- Managing consequence
- Managing human responses during times of crisis
- Managing and evaluating service level agreements (or similar)
- Critical infrastructure asset management

Year 3 - MA

The final year expands your horizons even further, giving you the chance to develop your thought leadership and address specific business issues. First, in the "Contemporary Issues in Leadership and Management" module, you will explore themes in the data centre sector and gain an in depth understanding of issues that are important to you. Next, you will develop your research skills, giving you the expertise to frame, plan and deliver research - this will provide a platform for your academic studies and will also enable you to develop new, credible and robust knowledge in your business. Finally, you will put all of your learning into practice by developing and delivering a major project ("dissertation" or "thesis"). You can look at this as a piece of work which could address a live issue in your workplace, or be based on a theme in the data centre sector as a whole. Your major project will be one of the defining moments of your Masters Degree program and could open the door to further study or career development.

Contemporary Issues in Leadership and Management

- Leadership and CSR
- Technology advancements and implications
- Sustainability and environmental issues
- Globalisation and offshoring
- Standards and quality management
- Other topics as identified by industry partners

Research Methods & Post Graduate Major Project

- Intellectual and practical skills to frame, plan and deliver research
- Analysis and interpretation of data generated
- Bringing this into action through a major research project, based on your own interests and providing a culmination of your work on the Masters program

The Digital Infrastructure Industry and Career Overview

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