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The **Global Leader** in **Technical Education** for the **Digital Infrastructure Industry**

2019

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Contents

About CNet Training

International award-winning education company, CNet, has been designing and delivering professional network infrastructure training and education programs since 1996.

Today CNet is the global leader in technical education for the digital infrastructure industry, comprising the data center and network infrastructure sectors, and is the only industry dedicated education provider to award both internationally recognized qualifications and professional certifications. These qualifications start at level 3 and culminate in the world's only level 7 Masters Degree program in Data Center Leadership and Management.

A significant part of CNet's history is the development of the highly acclaimed Global Digital Infrastructure Education Framework, which offers industry professionals an opportunity to plan technical education, qualifications and certifications to meet on-going individual and business needs.

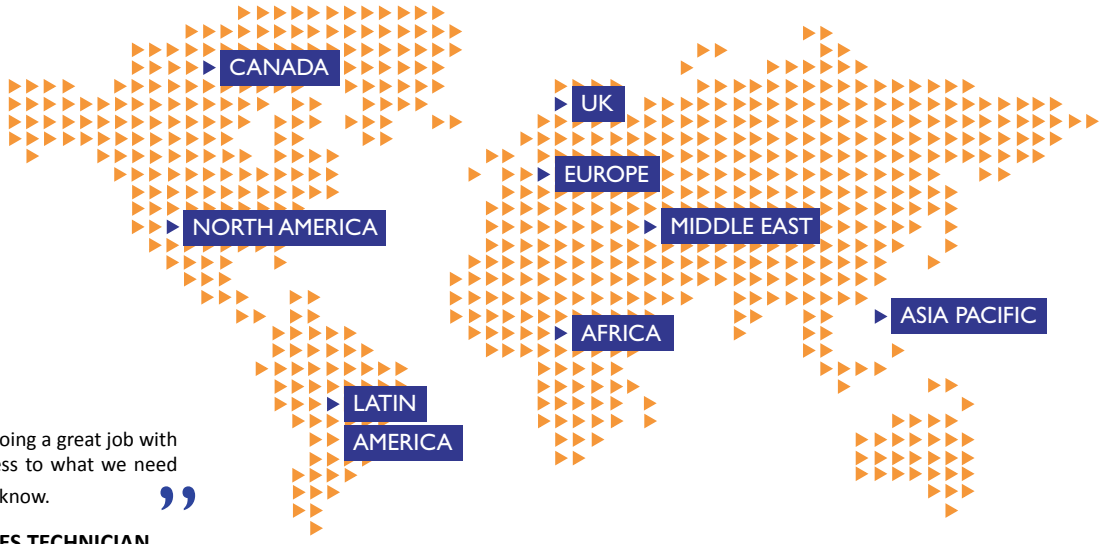
CNet deliver classroom-based technical education programs led by expert instructors in locations across the world and in virtual classrooms, allowing ease of access to all industry professionals wherever they are, in addition to online and distance learning programs. Alongside its impressive client list of multinational organizations, the company is proud of its close associations with the world's leading trade associations and industry bodies including the Data Center Alliance, Infrastructure Masons, AFCOM and 7x24. CNet is trusted by many of the world's leading manufacturers of data center and network infrastructure solutions to design and deliver their specific training and education programs.

23 Years
of Technical Education Experience

Founded in 1996, CNet is highly trusted by the global data center and network infrastructure sectors and recognized around the world for its quality of delivery and technical excellence.

1996 CNet Training began trading	**1998** Winner - Communications Industry Award for the Trainer of the Year	**1999** Winner - Communications Industry Award for Outstanding Achievement	**2000** Became an Approved Pearson Center	**2000** Winner - Networking Industry Award for Training Company of the Year
2001 Winner - Networking Industry Award for Training Company of the Year	**2002** Winner - Networking Industry Award for Training Company of the Year	**2003** Winner - Networking Industry Award for Training Company of the Year	**2004** Winner - Networking Industry Award for Training Company of the Year	**2005** Launched the Certified Data Center Design Professional (CDCDP®) Program
2005 Launched Programs into the United States	**2007** NCN voted CNet as one of the top ten most influential organizations	**2007** Launched the Certified Data Center Technician Professional (CDCTP®) Program	**2009** Awarded the 2012 Olympics Project	**2010** Go for Growth - Finalists for Excellence Awards Professional Services
2010 Launched the Certified Data Center Management Professional (CDCMP®) Program	**2011** Winner - Comms Expo Award for Outstanding Contribution to the Industry	**2011** We trained our 35,000th individual and launched the Certified Network Cable Installer (CNCI®) Program	**2012** Opened Singapore office location and United States office location	**2012** Launched the Certified Data Center Energy Professional (CDCEP®) Program
2012 Winner - Netcomm's Award for Data Center Professional Development & Training Excellence	**2013** Winner - Network World - Vendor Awards - Training Provider of the Year	**2014** CNet Launched the Masters Degree in Data Center Leadership and Management with Anglia Ruskin University, UK	**2014** Launched the Certified Network Cable Installer (CNCI®) as the new industry standard certification	**2014** Chosen to be an AFCOM Educational Partner
2014 Winner - Best Contribution to Education for the Data Center Industry in the International Data Center and Cloud Awards	**2014** Launched the Certified Network Infrastructure Design (CNID®) Program	**2015** Launched the Certified Network Infrastructure Design Professional (CNIDP®) Program	**2015** CNet launched a NEW Distance Learning program Data Center Fundamentals	**2015** Launched the Certified Data Center Audit Professional (CDCAP®) Program
2015 Launched the Certified Network Infrastructure Technician (CNIT®) Program	**2016** Our 20th Anniversary!	**2016** Launched the World's First CCAM® Tool for the Data Center Sector	**2016** Winner - Innovation in Global Data Center Education Award from the Datacloud Awards	**2016** Winner - Intelligent Training Provider of the Year
2017 Launched the Certified Network Infrastructure Design Professional (CNIDP®) Program in the U.S.	**2017** Approved as an Associate College by Anglia Ruskin University (ARU) to deliver the Masters Degree in Data Center Leadership and Management	**2017** Chosen as the official Global Education Partner with media technology company, BroadGroup and their global Datacloud events series	**2018** CNet launched Remote Attendance Classes	**2018** CNet won the Best Programme for Data Center Training Award at BroadGroup's Datacloud Europe event
2018 CNet won the Best Programme for Data Center Training Award at BroadGroup's Datacloud Asia event	**2018** Launched the Certified Data Center Sustainability Professional (CDCSP®) Program	**2018** First Masters Degree in Data Center Leadership and Management Graduation Ceremony	**2018** CNet Released high level data center programs with a New 5-day duration	**2019** Launched the Certified Integrated Infrastructure Technician (CIIT®) Program

Delivering Education Across The Globe



"CNet Training is doing a great job with bringing awareness to what we need to know."

SITE SERVICES TECHNICIAN

"The Instructor was excellent, explaining all parts of the CDCT® program in depth and from real life situations which made it more relatable, the training was very clean. The Instructor is very very knowledgeable in every aspect."

SENIOR IBX TECHNICIAN IV

"The CDCAP® program is intense yet the Instructor made everyone in the class think about the wastes/inefficiencies within data centers we can easily avoid and as a result our companies could save millions while respecting the environment."

DATA CENTER ENGINEER

"I certainly appreciate the coaching and guidance on the Masters Degree. Looking at what I have gained in the past few months, it has really helped me personally and professionally. A whole lot of new horizon has opened for me and I am able to see clearer from a leadership perspective."

PROJECT MANAGER

"The CDCEP® program was very well implemented, giving valuable information and insight into energy efficiency and how we can use it to its best ability."

DATA CENTER MANAGER

"The CDCDP® program is excellent! Chalked full of information. The Instructor was fantastic and a joy to learn from. The material is all there and relevant."

DATA CENTER ENGINEER

"I really enjoyed the CDCM® program, it was very informative and filled a lot of gaps I've often wondered about in my career in the data center."

DATA CENTER SERVICES SUPERVISOR

"For the record the CNIT® is probably the best program I have done. Bring on the design program!"

ESTIMATOR

"The CNCI® is a fantastic program which I got a lot out of! It also seems to be really useful for others with lots of experience, as well as myself with very little experience. Great content and delivery."

ICT TECHNICIAN

"The CNIDP® is an excellent program. An extremely educational and satisfying program, it exceeded my expectations, thank you."

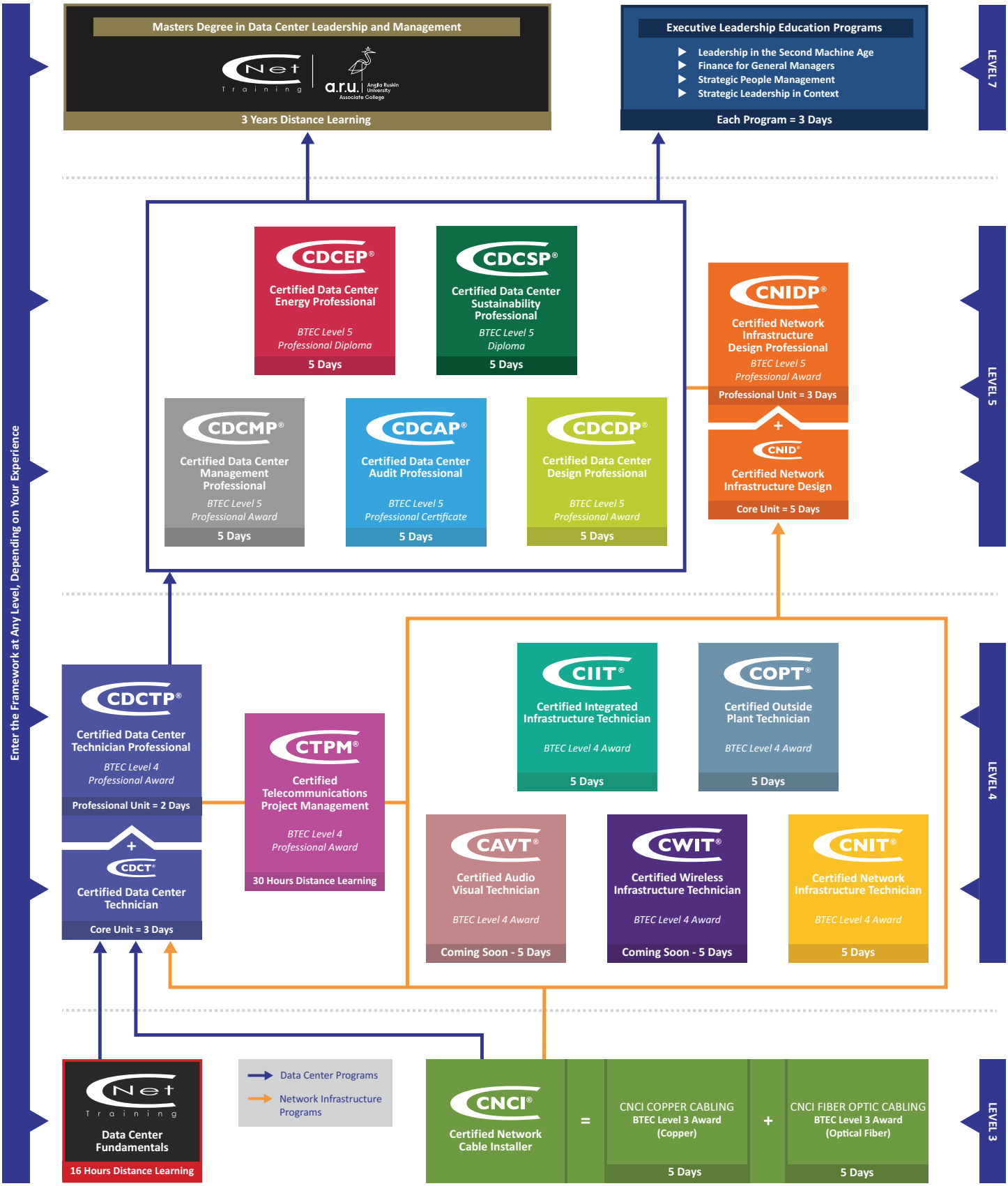
INFRASTRUCTURE MANAGER

"We used the training for the CTPM® as a team building event. We allowed ourselves the 30 hours of formal classroom time as indicated and I've got to say that the whole experience was thoroughly enjoyable and sparked some interesting conversations around what we would consider to be standard practice and some of the information we learned, not to mention some lively debates."

DATA CENTER MANAGER

The Global Digital Infrastructure Education Framework

Recognized and respected all over the world, the highly acclaimed Global Digital Infrastructure Education Framework allows industry professionals to map education to meet their needs. It provides designations that have become key skills reference points that allow those holding them to clearly demonstrate their ability and experience. Each program addresses the skills and knowledge requirements of different roles throughout the industry and you can enter the framework at any level, depending on your experience.



Certifications and Accreditations

Working with industry associations and educational bodies ensures that CNet Training's internationally recognized qualifications are relevant to the industry, they are also sought after by employers. All CNet Training programs offer official certifications (awarded by CNet Training) and recognized qualifications (awarded by Pearson, the world's largest education provider).

What is a Certification?

A Certification proves that an individual has completed the learning process and achieved the stated objectives. It provides a certification and post nominal letters to use after the students name (all CNet Training's programs provide a post nominal designation). Certifications are unique; they are recognized by the industry and help to set the individual, and therefore the employer, apart from its peers.

Certifications can prove essential as part of a career portfolio and enhance credibility with current and future employers. They also show a commitment to life-long learning and offer the perfect portal to ensure knowledge, skills and certifications remain current and up-to-date and reflect the latest industry standards, best practices and technological advancements. Each certification gained from CNet Training requires re-certifying every three years. Re-certification is undertaken online via the CNet Training learning management system, it is quick, easy and can be taken at a convenient time.

Benefits of Certifications for the Employer:

- Employees' skills are enhanced every three years with new learning to bring staff's knowledge up-to-date with the very latest changes and technical developments within the industry
- Ensures employees are also aware of the latest working standards and codes of practice
- Provides certification for a further three years after each re-certification
- Allows training budgets to be forecast accurately on an on-going basis

Benefits of Certifications for the Employee:

- Provides certification for three years
- Keeps knowledge and skills in line with industry requirements
- Provides a post nominal title i.e. John Smith CDCDP
- Provides access to download the latest program material, enabling learners to use this as reference whenever required.

Re-certification

Keeping you up-to-date with the industry.

The data center industry is ever-growing and evolving and it is important that your knowledge remains up-to-date and relevant to reflect the very latest needs, standards and codes of practice that are constantly being developed.

CNet have designed and developed a simple online re-certification process. We utilize a Learning Management System (LMS) allowing learners to log on and undertake the re-certification at a convenient time and place for them. The process now only provides further learning, allowing learners to update knowledge and re-certify skills, on successful completion it also provides access to download the program material detailing the very latest technical information that you can refer back to time and time again.

Why Re-certify Your Skills?

- Provides new learning to bring your knowledge up-to-date with the very latest changes and technical developments within the industry
- Ensures you are aware of the latest standards and codes of practice
- Ensures you can continue to use your post nominal title i.e. Martin Smith CDCDP
- Provides you with access to download the program material, enabling you to use this as a reference in the future
- Provides certification of your status for a further three years

What are Accreditations?

Accreditations usually consist of a short period of training which are certified to prove competency in relation to a certain subject. Many vendors have their own training programs, these prove learners understand their products and are proven to be competent users. Again, accreditations often have a time scale of 2-3 years associated with them before renewal is required.

Qualifications and their Equivalents

What are Qualifications?

Qualifications can only be awarded by authorized bodies; authorization is granted by the government. Pearson benefits from being internationally authorized to award qualifications. CNet is a Pearson approved center, authorized to design, create and deliver technical education that leads to a qualification.

Qualifications are valid for life, they do not need renewing. They are referenced to the International Qualification Framework and therefore recognizable across the world.

Achievement at Level 4

Achievement at Level 4 reflects the ability to identify and use relevant understanding, methods and skills to address problems that are well defined but complex and non-routine. It includes taking responsibility for overall programs of action as well as exercising autonomy and judgement within fairly broad parameters. It also reflects understanding of different perspectives or approaches within an area of study or work.

Benefits of Qualifications for the Employer:

- Ensures your employees are trained to a specified level at that time, however does not have the ability to keep knowledge and skills in-line with the industry on an on-going basis
- Usually incurs just a one-off fee
- You can be sure the training provider is a professional company as the criteria to become an approved training center is quite a vigorous process

Benefits of Qualifications for the Employee:

- Provides official recognition for your knowledge and skills at the time of taking the examination
- Qualifications are recognized globally by comparing the educational levels

Achievement at Level 5

Achievement at Level 5 reflects the ability to identify and use relevant understanding, methods and skills to address broadly-defined, complex problems. It includes taking responsibility for planning and developing programs of action as well as exercising autonomy and judgement within broad parameters. It also reflects understanding of different perspectives, approaches or schools of thought and the reasoning behind them.

The table below shows the professional IQF (International Qualifications Framework) level awarded for each program together with their equivalents internationally.

Higher Education Level - Approximate International Level Equivalences							
Program		**RQF Level (England, NI, Wales)**	**EQF Level (Europe)**	**United Kingdom**	**United States**	**Canada**	**Australia**
Masters Degree in Data Center Leadership and Management	MA	7	7	▶ Masters Degree ▶ Post Graduate Certificate/ Diploma	▶ Masters Degree ▶ Graduate Certificate/Diploma	▶ Masters Degree ▶ Graduate Diploma	▶ Masters Degree (AQF9)
Certified Data Center Sustainability Professional	CDCSP®	5	5	▶ Foundation Degree ▶ DipHE (Diploma Higher Education Level) ▶ Second Year of Bachelor Degree	▶ Bachelor Degree ▶ First Professional Degree	▶ Bachelor Degree ▶ First Professional Degree	▶ Associate Degree ▶ Advanced Diploma (AQF6)
Certified Data Center Design Professional	CDCDP®						
Certified Data Center Management Professional	CDCMP®						
Certified Data Center Energy Professional	CDCEP®						
Certified Data Center Audit Professional	CDCAP®						
Certified Network Infrastructure Design Professional	CNIDP®						
Certified Data Center Technician Professional	CDCTP®	4	4	▶ First year of Bachelor Degree ▶ Cert HE (Certificate Higher Education Level) ▶ HE (Certificate Higher Education Level)	▶ Associate Degree ▶ Associate of Arts/Science Degree	▶ Associate Degree	▶ Diploma (AQF5)
Certified Telecommunications Project Management	CTPM®						
Certified Network Infrastructure Technician	CNIT®						
Certified Integrated Infrastructure Technician	CIIT®						
Certified Wireless Infrastructure Technician	CWIT®						
Certified Outside Plant Technician	COPT®						
Certified Audio Visual Technician	CAVT®						
Certified Network Cable Installer	CNCI®	N/A	3	▶ A Level	▶ High School Diploma	▶ High School Diploma	▶ Higher School Certificate (NSW) or State Equivalent

EXPERIENCED Instructors

At CNet Training we are proud of our ability to provide program learners with access to some of the most respected and technical minds in the data center and network infrastructure industry. This may seem obvious, but is sometimes overlooked; a great Instructor has knowledge of and enthusiasm for the subject matter that they are teaching. They are prepared to answer questions and keep the material interesting for the program learners.

CNet Instructors are world renowned and they also help to shape the direction of their industries by being active members of associations and committees that define how that industry will operate in the future.

Our Train-the-Trainer Quality Commitment

CNet is committed to quality management and takes it very seriously. CNet's quality management system is certified as conforming to ISO 9001:2008 which demonstrates continued quality focus. Every Instructor is employed by the company which allows the implementation of processes to ensure that they are equipped with the knowledge, skills and abilities to guarantee program delivery is exceptional in every respect. This starts with the rigorous Train-The-Trainer process.

Train-the-Trainer Process

Each Instructor has to undertake a comprehensive and in-depth process for each program they will teach. The process can take between 6-12 months to complete which demonstrates our total commitment to quality and ensuring our program delivery continues to be world renowned.

There is also an on-going assessment required with regular technical audits, to ensure each Instructor's technical delivery meets our required high standards. Plus after each program delivery a quality audit is undertaken from information received directly from the feedback provided from each learner (each learner is asked to assess the program content and the delivery from the Instructor and there are certain quality scores we aim to achieve, if we do not meet the required quality scores action is taken to address this).

Plus, as each CNet program is regularly reviewed and updated to ensure the technical content remains current, Instructors receive masterclasses from the Technical Manager, this new learning is also assessed to ensure accuracy when delivering to learners.

"Excellent training, had a great time with the Instructor and training content."

PAUL GORMAN

"Great enthusiasm and energy. Excellent ability to tie learning into real world examples."

MELISSA CHAMBAL

"Instructor was very knowledgeable and engaging."

TIM AMEY

"Top class Instructor who is helpful and very knowledgeable in his subject."

KEVIN MATLESS

"Excellent presenter. Thanks Tony for a great program."

TONY HASSETT

"Best Instructor from all training courses I ever attended."

TIM DICKENS

"John is a fantastic Instructor. Lots of hands on knowledge and very interesting class."

JOHN NORRIS

"Great Instructor, made the class very interesting and he makes you want more information."

GEORGE SALINAS

"What a masterclass teacher Pat is!"

PATRICK DREW

"Tony was class, second to none, great guy and Instructor."

TONY CLARE

"Danny was excellent. Very friendly and made everyone feel at ease."

DANNY TURLEY

"John is excellent. He's concise, direct and presented an excellent program."

JOHN BARROWS

"Jill has the uncanny ability to create sense from challenging concepts. She is a born teacher."

JILL BALDWIN

"His knowledge of network infrastructure is outstanding, as is his experience of the MOD data center structure."

CLINT SHERRATT

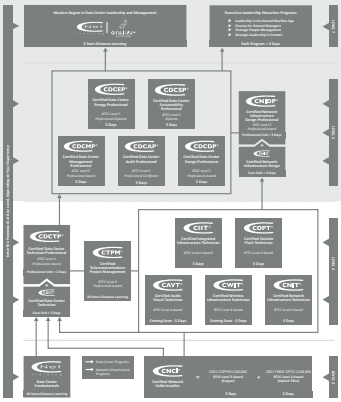
Why Choose CNet Training?

The **Global Leader** in **Technical Education** for the **Digital Infrastructure Industry**

The **only** dedicated industry education provider in the world to award both industry recognized **qualifications** and **certifications**

The **chosen education provider** by the world's most influential organizations

Originators of The Global Digital Infrastructure Education Framework, followed by multinational organizations across the world



Approved as an **Associate College by Anglia Ruskin University, UK,** to deliver the Masters Degree in Data Center Leadership and Management

Experienced and trusted - the largest and longest serving industry dedicated education provider, delivering **quality education since 1996**

CNet is **100% customer focussed** and **quality driven**

ISO 9001:2015 accredited for quality commitment

All CNet Training Instructors are employed by the company ensuring we maintain our high quality standards

Each Instructor undertakes a rigorous **Train-the-Trainer Process**

Multiple global industry **awards WON!**

Approved to provide qualifications by **Pearson**, the world's largest education company

Trained over **65,000 individuals**, in **35 countries** and to **121 different nationalities**

Benefit from **strong alliances** with many of the **world's leading organizations** such as AFCOM, TIA, DCA, The Green Grid, Pearson, BCS, Department of Energy - DoE (USA)

Remote Attendance Programs

Utilizing collaboration-enabled facilities within smart rooms

Remote Attendance Programs

Experience Real-time Collaboration Remotely

CNet's remote attendance capability is different from others, it really does share the same classroom experience live with learners wherever they are in the world.

Using the latest collaboration-enabled facilities CNet provides those wishing to attend a program remotely with access to specially designed smart rooms. In real-time remote attendees benefit from the same Instructor-led classroom environment, with the same levels of interaction, collaboration and Instructor contact as those who are physically present in the room. Remote attendees effectively sit in the same classroom as all other learners and can therefore see, hear and enjoy the same learning experience.

Remote Attendees:

- Sit in the same classroom as all others
- Work through the same learning materials as all other learners
- Interact with the Instructor and other learners as if you are in the same classroom
- Participate in group activities via live virtual breakout rooms

This new learning experience has many other benefits:

- Save travel costs
- Save travel time
- Save accommodation costs
- Save subsistence costs
- Learn in the comfort of your chosen environment

How Does It Work?

The smart rooms are fitted with the latest high-definition, bi-directional audio/visual communication and collaboration tools that effectively transports the remote attendees into the classroom. All learners and the Instructor can see and interact with each other in the usual way.

Remote attendees simply receive a link from CNet Training to download the necessary software and log in details for the CNet Training Learning Management System. Then, along with the items listed below, remote attendees have everything they need to enjoy the entire learning experience.

UK Tel: +44 (0)1284 767100 | **US Tel:** +1 302-526-1977 | **Web:** www.cnet-training.com | **Email:** info@cnet-training.com

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Data Center Fundamentals

16 Hours Distance Learning

Perfect for those new to the data center sector

Data Center Fundamentals

16 Hours Distance Learning

Program Overview

De-mystify the complex world of data centers.

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

Data centers 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 centers. It provides an overview of what data centers 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 center management such as operational processes, energy management and facility management are explored along with their relationships to overall business strategy. The data center sector as a whole is also explained including the value of the sector today, the significant growth it has experienced 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.

Learner Profile

This program has been designed for individuals who are either new to the data center sector (technicians with limited experience or exposure to data center facilities) or for those who sell products and services to the data center sector.

Pre-requisites

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

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.

Program Objectives

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

Certification

- CNet Training Certification
- Use of the official Data Center Fundamentals Digital Badge

Data Center Fundamentals Topics:

What is a Data Center?

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

The Role and Objectives of a Data Center

- Driving factors for a data center
- Data center standards
- Data center availability models and considerations
- Location and building considerations

Design Overview

- Criticality considerations and their relationship to business strategy
- The four key constraints (4C's) - Power, Cooling, IT Infrastructure and Space

Managing a Data Center

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

The Data Center Industry and Market

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

AVAILABLE IN ENGLISH & SPANISH

CDCTP®

Certified Data Center Technician Professional

BTEC Level 4 Professional Award

=

PROFESSIONAL UNIT
2 Days

+

CDCT® CORE UNIT
3 Days

Certified Data Center Technician

Perfect for technical personnel who are responsible for the day-to-day smooth operation of the data center

"Amazing from beginning to end. Made me a better overall data center technician."

Certified Data Center Technician Professional (CDCTP®)

5 DAY PROGRAM

Program Overview

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

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

The five-day Certified Data Center Technician Professional (CDCTP®) program is for individuals working within mission critical data center facilities. It explores the wide range of subjects relevant to the data center technician including a detailed breakdown of the data center 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, analyze, 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 center sectors.

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

Split into:

- **3 Day Core Unit - Certified Data Center Technician (CDCT®) Core Unit**
- **2 Day Certified Data Center Technician Professional (CDCTP®) Unit**

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 center 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 center environment is essential. 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

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

Qualification

- Internationally and industry recognized BTEC Level 4 Professional Award in Certified Data Center Technician Professional

Certification

- Official Certified Data Center Technician Professional (CDCTP®) certification
- Use of the CDCTP post nominal title
- Use of the official Certified Data Center Technician Professional (CDCTP®) Digital Badge
- Use of the CDCTP® 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 a online learning management system.

Additional Awards

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

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CDCTP® Benefits for Individuals

- Understands all aspects of data center operations including technical and physical constraints. Recognizes the dependencies on other work streams, can plan work efficiently and avoid unnecessary delays
- Understands the benefits of carrying out physical inspections of data center 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
- Recognizes 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 center 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 center 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 Center Technician Professional (CDCTP®) Topics

Core Unit

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

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

The Physical Infrastructure
- The Four Key Environments (Power, Cooling, IT Connectivity and Space)
  - **Power**
    - Power infrastructure (data center 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 center networks
      - Distribution options
    - Physical Network
      - IT cabinets and frames
      - Cable containment
      - Data center topologies
      - Structured wiring
      - Fiber optical cabling
  - **Space**
    - Relationship between white and grey space environments
    - Physical security and access control

Working in the Data Center
- 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 Center Maintenance
- The need for maintenance
- Maintenance strategies
  - Preventative maintenance
  - Predictive maintenance
  - Reliability centered 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 & routine checks
- Benchmarking and data center metrics

Advanced Cooling
- Understanding the need for cooling
- Data center cooling architectures and systems
- Air cooling
- Economizer 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.

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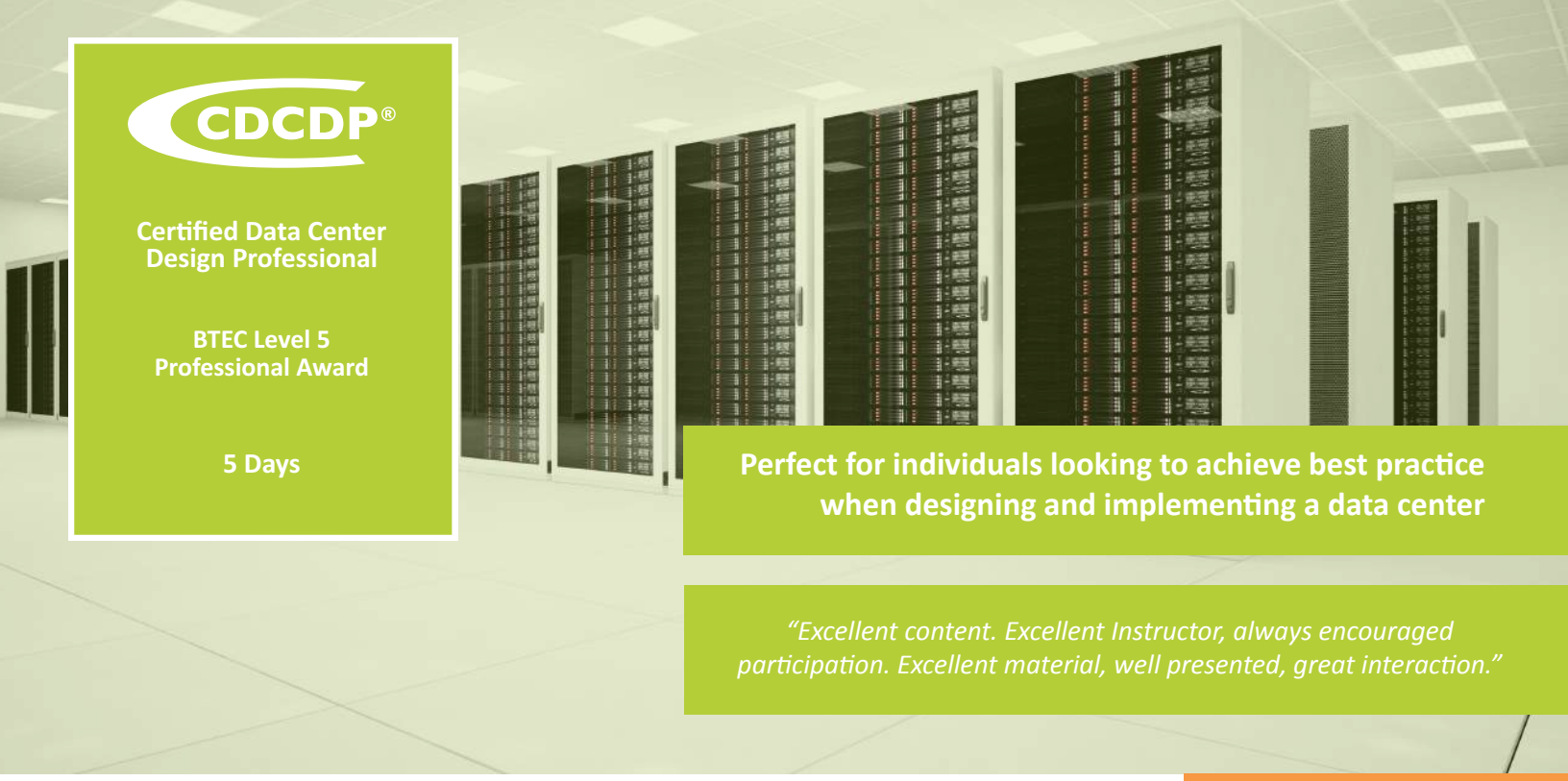

CDCDP®

Certified Data Center Design Professional

BTEC Level 5 Professional Award

5 Days

Perfect for individuals looking to achieve best practice when designing and implementing a data center

"Excellent content. Excellent Instructor, always encouraged participation. Excellent material, well presented, great interaction."

Certified Data Center Design Professional (CDCDP®)

5 DAY PROGRAM

Program Overview

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

The Certified Data Center Design Professional (CDCDP®) program is proven to be an essential certification for individuals wishing to demonstrate their technical knowledge of data center 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 center. It teaches best practice principles for the design, construction and operation of computer rooms and data center 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 center sectors.

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

Program Duration

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

Learner Profile

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

Pre-requisites

Experience of working within a data center 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 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 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

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

Qualification

- Internationally and industry recognized BTEC Level 5 Professional Award in Certified Data Center Design Professional

Certification

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

- Continual Professional Development (CPDs)
- 7 IEEE Continual Education Units (CEUs)

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Certified Data Center Design Professional (CDCDP®) Topics

CDCDP®

What is a Data Center?
- The data center stack
- Types of data center

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, height, 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 stabilization
- 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 labeling
- 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 center equipment
- Functions and protocols, current and future
- Data center connections
- Cabling requirements
- Cabling standards
- Cabling options
- The impact of 40G and 100G
- The impact of virtualization

Copper and Optical Fiber Cabling Connectivity
- Cabling standards
- Cable categories supporting 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 fiber 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 center

Power Regulations
- Which regulations affect data centers?
- 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 Center
- 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 Center
- 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 center limiting factors
- Sources of cooling inefficiencies
- Cooling trends

Regulatory Climate
- Which regulations affect data centers?
- 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
- Maximizing 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 center
- DC power train
- Matching the support to the IT load
- Transformer efficiencies
- UPS & motor efficiencies
- DCiE for modular provisioning
- Maximizing the power factor
- Measuring and monitoring
- Infrared inspections
- Planned electrical safety inspections
- Implementing data center 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 Center 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 modeling
- Modeling tools
- Sources of guidance
- Effective v efficient
- The DC language barrier
- The multi-functional team
- Design for efficiency, operability & flexibility
- Industry recognized best practices

Design Management
- Characteristics of project management
- Key project processes
- Identifying and engaging with key stakeholders
- Setting goals
- Prioritization 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.

CDCMP®

Certified Data Center Management Professional

BTEC Level 5 Professional Award

5 Days

Perfect for individuals wishing to enhance their ability to effectively manage, control & improve the data center

"What a fantastic program, great material, great instructor and great in class network. It was good to meet other industry professionals and discuss data center management practices."

Certified Data Center Management Professional (CDCMP®)

5 DAY PROGRAM

Program Overview

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

The five-day Certified Data Center Management Professional (CDCMP®) is a comprehensive program that investigates the functionality of all elements of a data center 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 center projects.

It also explores the efficient management of the often conflicting operational and maintenance demands required of the data center plant to continuously deliver the business needs. The challenges of regulatory compliance, data center 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 center sectors.

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

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 center environment.

Pre-requisites

Experience of working within a data center 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 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 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

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

Qualification

- Internationally and industry recognized BTEC Level 5 Professional Award in Certified Data Center Management Professional

Certification

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

- Continual Professional Development (CPDs)
- 7 IEEE Continual Education Units (CEUs)

CDCMP® Benefits for Individuals

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

CDCMP® Benefits for Businesses

- Establish confidence that the data center manager is competent to strategically manage data center processes and procedures through continual improvement planning to meet the operational demands of the business
- Confidence that the data center 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 Center Management Professional (CDCMP®) Topics

CDCMP®

What is a Data Center?
- Data center definition
- Data center 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 center 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 Center Projects
- Business case
- The project cycle
- Prioritization of activities
- Triple constraints
- Customer value
- Quantitative risk analysis
- Rolling wave planning
- Decomposition
- Change management
- Documentation

Managing the Data Center
- 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
  - Virtualization
  - Cloud computing
  - Relocation
- Data Center facility management
  - Facility operations
  - Building Management Systems (BMS)
  - Fire safety compliance
  - Fire suppression

Purpose
- The data center 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 center team

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

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

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

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

IT Strategy
- The link between business and data centers
- 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 Center Energy Practitioner) - Green Grid maturity model

Standards and Accreditations
- National and international standards
- Accreditations
  - Uptime Institute
  - Certified Energy Efficient Data Center 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

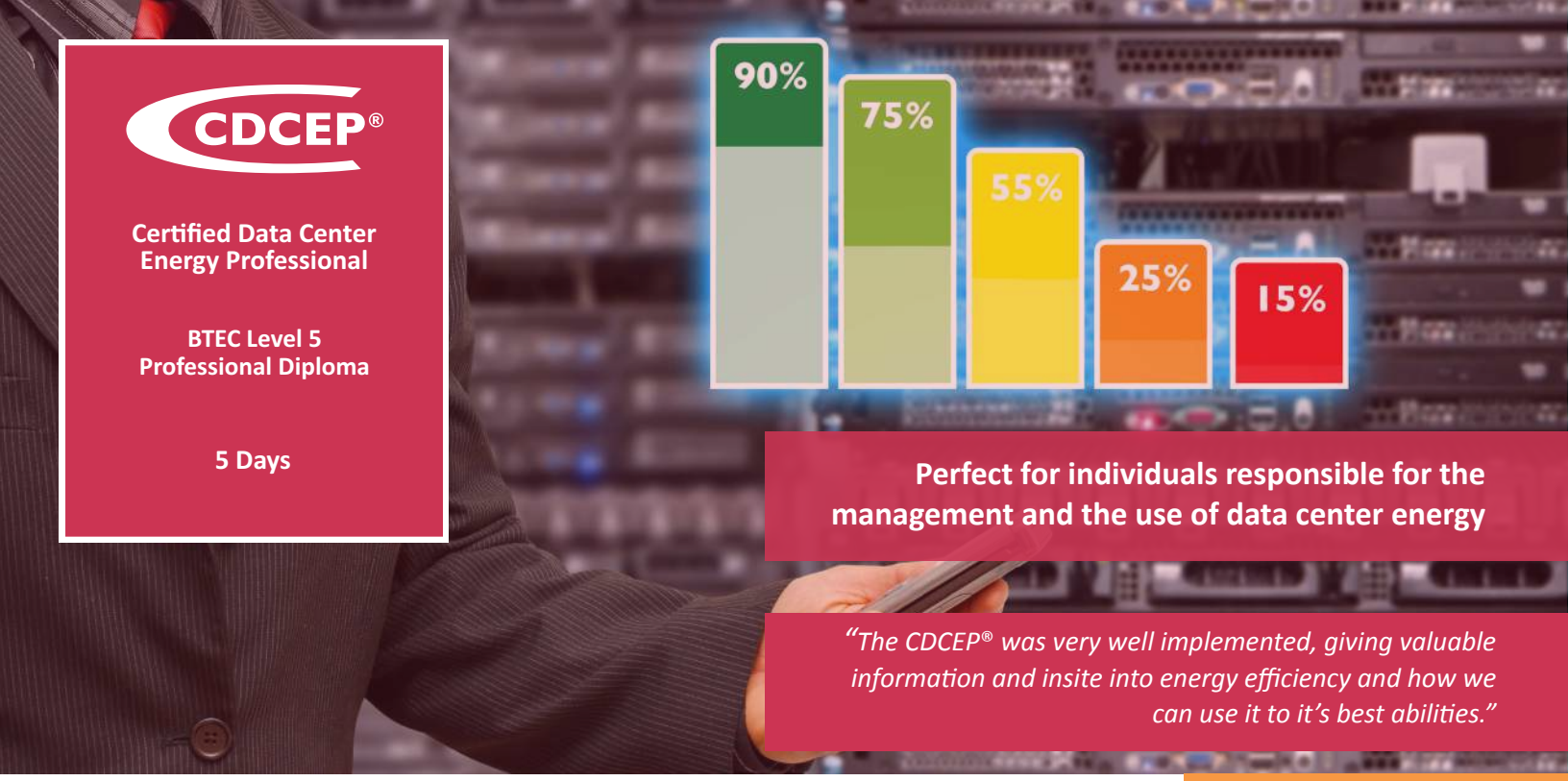
Auditing the Data Center Physical Infrastructure
- Audit guidance
- Site specific activities
- Evaluating the key environments
- Commissioning
- Functional testing
- Trend analysis
- Recommended practices

Performance Audits
- Current industry metrics
- Modeling 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.



CDCEP®

Certified Data Center Energy Professional

BTEC Level 5 Professional Diploma

5 Days

Perfect for individuals responsible for the management and the use of data center energy

"The CDCEP® was very well implemented, giving valuable information and insite into energy efficiency and how we can use it to it's best abilities."

Certified Data Center Energy Professional (CDCEP®)

5 DAY PROGRAM

Program Overview

Become an expert in data center energy management.

Learn how to create an energy efficiency plan for your data center. Includes creation, implementation, analysis and formulating recommendations with the ultimate objective of reducing energy use and carbon emissions.

The Certified Data Center Energy Professional (CDCEP®) program considers the global focus on how energy prices and environmental protection is driving the need to reduce energy wastage through greater efficiency. It is of utmost importance and an issue that continues to be foremost in the minds of those operating data center facilities.

The five-day program teaches expertise in energy efficiency and provides the tools to make a significant contribution to the energy strategy and effectively deal with, and manage, energy related issues and deliver efficiencies.

Strategically plan, design and implement an energy plan for data center facilities, focusing on energy efficiency. Learners will be introduced to current energy profiler tools and models to analyze site data and formulate a comprehensive action plan to implement real energy savings potential and capacity reclamation.

The use and distribution of power will be explored considering server and IT equipment, and how usage can quickly spiral out of control when it is not being measured, monitored and maintained correctly. In addition, the use of redundant and back-up power infrastructure will be analyzed considering the power utilization for air-conditioning, fire suppression, security, alarms and other supporting systems.

A certified CDCEP® also considers the requirements for compliance, having a full understanding of national and international regulations, codes, standards including the U.S. Department of Energy (DoE) standard. 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 center sectors.

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

Program Duration

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

Learner Profile

This program is targeted at individuals who are responsible for the management and use of energy within a data center.

Pre-requisites

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

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 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

Gain an unrivaled knowledge and forward-thinking approach to energy provision. Become an expert in the analysis of energy usage, identify opportunities for efficiencies, structure and implement a detailed energy efficiency plan.

Qualification

- Internationally and industry recognized BTEC Level 5 Professional Diploma in Certified Data Center Energy Professional

Certification

- Official Certified Data Center Energy Professional (CDCEP®) certification
- Use of the CDCEP post nominal title
- Use of the official Certified Data Center Energy Professional (CDCEP®) Digital Badge
- Use of the CDCEP® 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

- Continual Professional Development (CPDs)
- 7 IEEE Continual Education Units (CEUs)

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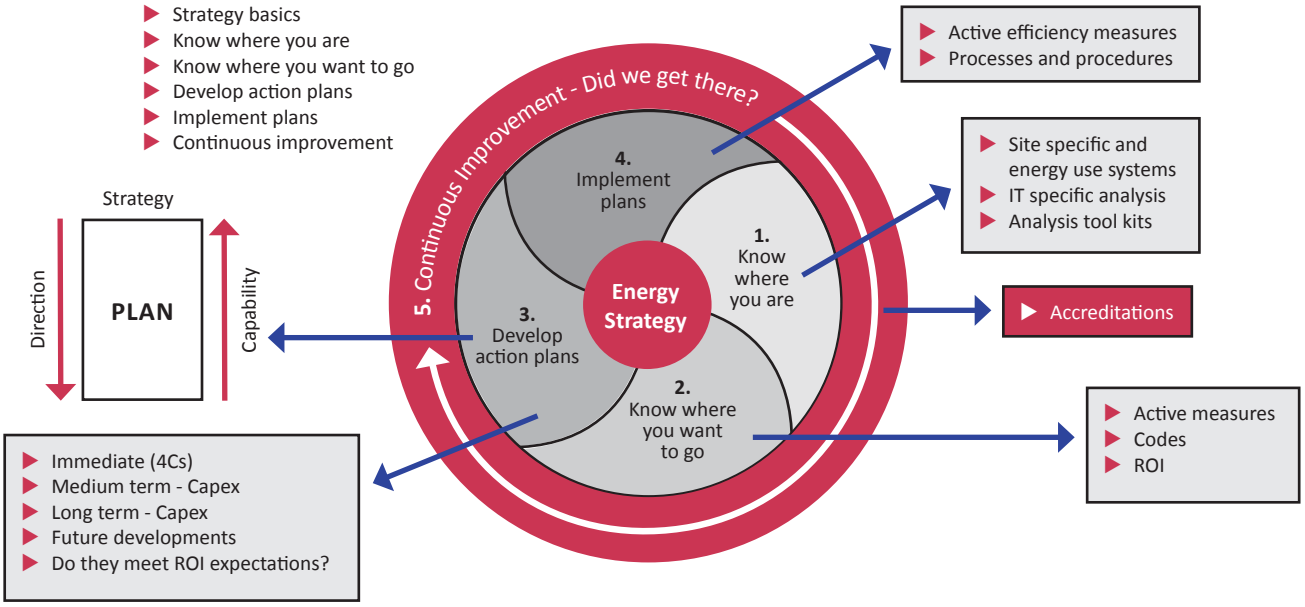
CDCEP® Program Objectives



Certified Data Center Energy Professional (CDCEP®) Topics

CDCEP®

Need for Energy Efficiency?
- CO_2 emissions issues
- Impact of increased energy demand
- Data center constraints

Corporate Social Responsibility
- Understanding Corporate Social Responsibility (CSR)
- Implementation of ISO 26000

Energy Audits
- Energy audit process
- Primary audit environments
- Actions to improve energy efficiency

Energy Evaluation
- Understanding energy consumption
- Identification of areas of concern
- Evaluation and modeling sources

Achievable Expectations & Energy Forecasting
- Achievable expectations
- Industry best practices
- Analysis and calculations
- Forecasting growth

Energy Metrics
- Need for metrics
- Current industry metrics
- New proxy metrics

Capacity Reclamation
- Understanding design parameters
- Importance of the four key constraints
- Decommissioning
- Capacity management

KPIs & Metrics
- Defining KPIs
- Selecting and preparing KPIs
- KPI measuring models

Business Continuity
- Business continuity considerations
- Site selection considerations
- Energy efficiency considerations

Energy Strategy
- Energy efficiency policy
- Energy efficiency strategy
- Energy action plan and management review

Energy Efficiency Plan
- Elements of the energy efficiency plan
- Continual monitoring

Delivery of the Energy Efficiency Plan
- Deployment of the energy efficiency plan
- Measuring, monitoring and reporting
- Energy efficiency procurement

Site Specific Energy Audits
- Audit direction
- Site specific audit plans
- Key energy audit areas

Energy Use Systems
- Major energy use systems
- Energy profile changes
- Optimization actions

System Specific Analysis
- IT analysis
- Power infrastructure analysis
- Environmental analysis
- Cooling analysis

Analysis Toolsets
- Data center toolsets

Active Energy-Efficiency Measures
- Establishing an energy baseline
- Measuring and monitoring
- Data analysis and energy plan preparation
- Real-time monitoring

Return on Investment
- Return on Investment (ROI)
- IT value
- Financial planning
- Total Cost of Ownership (TCO)

Codes & Best Practice
- U.S. Department of Energy (DoE) standards
- EU Code of Conduct

A Strategy for Energy Management
- Energy management roadmap
- Energy management team
- Energy awareness

Immediate Energy Actions (4C's)
- Importance of the four key constraints
- Identifying the immediate concerns
- Actioning the immediate concerns

Medium-Term CAPEX Actions
- IT measures
- Cooling measures
- Power measures
- CAPEX & ROI impacts

Long-Term CAPEX/OPEX Actions
- Long-term power efficiency
- Long-term cooling efficiency
- CAPEX & OPEX evaluation

Processes & Procedures
- Process & procedure requirements
- Process & procedure monitoring and control

Future Technical Developments
- New developing technologies

Energy Efficiency Accreditations
- Environmental accreditations
- Energy accreditations
- Data center energy accreditations

There are a number of group and individual case studies to formulate energy efficiency plans throughout this program.

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Certified Data Center Audit Professional (CDCAP®)

5 DAY PROGRAM

Program Overview

Plan and implement a strategic data center audit process. Analyze audit data to verify and baseline the status of the data center and create an action plan to reduce risk and improve the operational capability to support business continuity.

The demand for a data center to run at its optimum capability in both an effective and efficient manner is an essential requirement for a business. This five-day program provides data center professionals with the skills, knowledge and competency to create a strategic plan and undertake a comprehensive audit of data center environments.

Gain an understanding of the importance of acquiring detailed and accurate information concerning the operational capability of the data center facilities. The program details the requirement to continually measure, monitor and collate data to identify the potential areas of risk and the need to make recommendations to improve the availability, resilience and efficiency of a data center. This includes the physical infrastructure (IT, power and cooling), building facilities, asset management, documentation, processes and procedures.

A certified CDCAP® 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 center sectors.

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

Program Duration

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

Learner Profile

This program is for data center professionals with the technical experience within the varying data center environments wishing to extend their knowledge, skills and certifications in this highly specialized area.

Pre-requisites

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

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 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

Demonstrate advanced knowledge and ability to plan and implement a program of data center audits in line with the very latest industry requirements and standards to improve efficiency within the four key constraints of data center environments.

Qualification

- Internationally and industry recognized BTEC Level 5 Professional Certificate in Certified Data Center Audit Professional

Certification

- Official Certified Data Center Audit Professional (CDCAP®) certification
- Use of the CDCAP post nominal title
- Use of the official Certified Data Center Audit Professional (CDCAP®) Digital Badge
- Use of the CDCAP® 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

- Continual Professional Development (CPDs)
- 7 IEEE Continual Education Units (CEUs)

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Certified Data Center Audit Professional (CDCAP®) Topics

CDCAP®

The Business Needs
- Appreciate why audits are an essential business requirement
- Understand the importance of defining the current business needs
- Appreciate the need to define what the business actually has
- Understand the business (C Level) against operational perceptions
- Ascertain whether the business understands their tier rating and that it actually meets the business need

Scoping the Audit
- Understand the impact of business Service Level Agreements (SLAs)
- Understand the business direction and the importance of identifying the key stakeholders
- Understand the interaction between the key stakeholders and the operational data center departments
- Appreciate the factors to be considered when formulating the audit scope
- Appreciate applicable supporting standards, regulations and industry best practices

Establishing the Audit Process
- Appreciate the need to understand the present capability against the business perception
- Appreciate the business expectations with the need for a continuous commissioning process
- Be able to define the framework of the audit process
- Understand the need to undertake an audit risk analysis process
- Be able to identify the audit lead and team requirements

Performing the Audit
- Appreciate the need to undertake documentation review
- Appreciate the impact of regulatory requirements and Service Level Agreements (SLAs)
- Appreciate the operational and environmental structures within the data center structure
- Understand the key audit areas, the audit expectations and implementation of test sequences

Analysis and Recommendations
- Appreciate the need to evaluate the audit findings against the operational requirements of the business
- Identify the gaps in the operational capability
- Understand the need to evaluate policies, processes and procedures against business expectations
- Appreciate the need for operational documentation accuracy
- Appreciate the assessment of equipment against lifecycle costs, ROI and TCO
- Identification of business risks, operational weaknesses and areas of inefficiency

Action Plan and Reporting
- Understand the need to determine how the site measures up against the recognized industry best practices that are considered to be appropriate by the auditor
- Understand how to assess the recommendations and formulate the supporting action plan

Measuring and Monitoring Progress
- Appreciate the importance of establishing an accurate baseline
- Appreciate the importance of establishing a structured measuring and monitoring strategy
- Appreciate the appropriate use of metrics
- Appreciate the need to re-evaluate the action plan

Follow on Actions
- Appreciate the need for forward planning
- Appreciate the actions to align the data center assets following the audit process
- Appreciate the need to review and align skill-sets
- Appreciate industry guidance and accreditations

Audit Preparation
- Understand the importance of the business and key stakeholder demands
- Understand the need for an effective audit structure
- Understand the need to have an effective communication plan
- Understand the need to identify areas of concern and potential improvements

Mechanical (Power and Cooling) Audit
- Understand the electrical systems audit process
- Understand how to conduct an audit
- Understand the importance of power quality
- Understand the data center electrical distribution system
- Understand electrical safety requirements in a data center
- Understand the data center mechanical systems audit process
- Understand what systems to audit are included in a data center mechanical systems audit
- Appreciate the value of data center cooling metrics
- Understand the importance of the chilled water cooling circuit
- Understand the methods to conduct a cooling capacity check
- Understand the importance of air management in a data center
- Understand the benefits of performing a Computational Fluid Dynamic (CFD)

IT Infrastructure Audit
- Understand how to plan an IT audit
- Understand the different areas of an IT audit
- Understand the audit demands of the computer, storage and network environments
- Understand the supporting infrastructures that require to be audited

Security Audit
- Understand the focus, segments and scope required to spell out security audit requirements
- Understand the training, certifications and experience of potential security auditors or know where to look for guidance
- Scope and types of security audits
- Understand potential audit outcomes
- Evaluate the security auditor's report
- Understand how to distribute and archive the security audit

Building and Support Services Audit
- Understand the need to review the Building Automation Systems (BAS) and site maintenance
- Understand the key areas of measuring and monitoring
- Understand the implementation of the fire containment plan and emergency requirements
- Understand what support services are in place

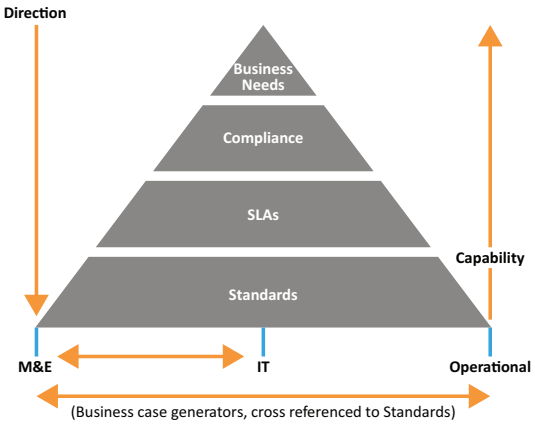
Asset Management Audit
- Appreciate the importance of asset management
- Understand the need to develop an effective asset management strategy
- Understand the asset management control options
- Understand the impacts of MACs and decommissioning
- Understand the financial implications

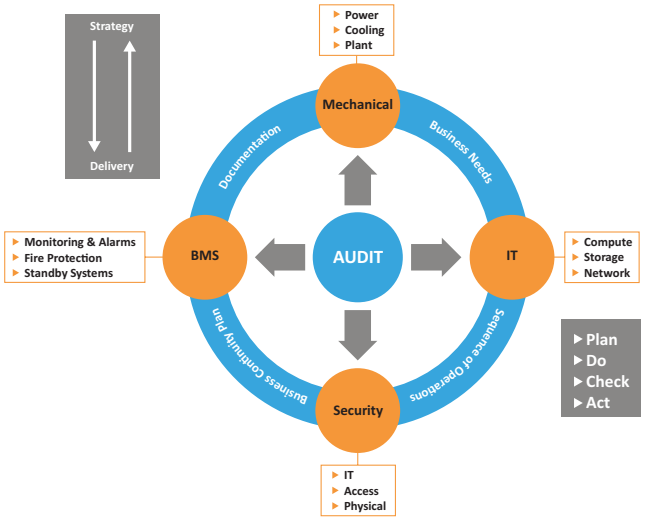
Process, Procedures and Working Practices Audit
- Appreciate the structure of data center policies, processes and procedures
- Appreciate the need to review the policies, processes and procedures
- Evaluate whether they are fit for purpose and actions to escalate non-compliance issues
- Appreciate the industry guidance to improve the effectiveness of the processes and procedures
- Appreciate the implementation of appropriate review cycles

Documentation Audit
- Understand the need to incorporate documentation into the audit process
- Understand the need for structured and accurate documentation
- Understand external and internal compliance documentation
- Understand how key operational structures are documented
- Understand whether the documentation is ultimately "fit for purpose"

Audit Closure Process
- Understand the need to effectively collate the audit data
- Understand the need to implement an effective action plan incorporating all interested parties
- Understand the need to have a structured approach to ensure a continual audit capability is implemented

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





CDCSP®

Certified Data Center Sustainability Professional

BTEC Level 5 Diploma

5 Days

Perfect for senior operational managers and engineers wishing to achieve sustainability within their data center

Certified Data Center Sustainability Professional (CDCSP®)

5 DAY PROGRAM

Program Overview

Create a sustainability strategy and business implementation plan for transformation towards a credible sustainability lifecycle, that demonstrates innovation and challenges business ethos whilst being sensitive to business risk and continuity.

Increased awareness of the urgency to implement and maintain a sustainable future coupled with evolving legislation means that data center operators are under great pressure to embrace sustainability strategies and improve their 'green' credentials rapidly and be able to evidence improvement to stakeholders.

The exciting and comprehensive Certified Data Center Sustainability Professional (CDCSP®) program is designed to provide in-depth knowledge into the steps required to evaluate, analyse, plan, implement and monitor a sustainability strategy balanced with operational capability for data center facilities.

Achieving sustainability is evaluated from all angles with the overarching requirement to ensure the data center critical facility continues to meet the needs of the business. The importance of implementing the correct strategic vision and business drivers required to establish a well-balanced and structured approach towards sustainability is explored. From initial business case and operational analysis of power distribution, cooling systems and IT hardware, and potential operational risk, to design innovation and implementing initiatives whilst appreciating both the business and operational challenges that may occur during this process. Maintenance strategies, continuous planning cycles and critical analysis against identified targets are also explored, in addition to the need to demonstrate proven ROI as well as identifying and capitalising on the business, customer, social and environmental benefits.

A certified CDCSP® 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 center sectors.

Program Duration

5 day class requiring pre-class study of approximately 20 hours, focussing on the following topics:

- Understanding Sustainability and the Business Approach
- Technological and Operational Approach to Sustainability
- Implementing Sustainability

Learner Profile

This program is structured for senior data center operations and facilities management, team leaders and senior engineers wishing to unite existing knowledge with new learning concerning achieving a sustainability focused strategy within their mission critical facility.

Pre-requisites

Experience of working within a data center environment is essential; preferably with two years experience as a technical designer, operations manager or in a senior facilities role. If you would like to discuss your experience or suitability for this program, please contact us.

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 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

The CDCSP® is designed to utilize existing data center knowledge, skills and experience, and combine it with new learning centered around technical collaboration and innovative approaches targeting sustainability within a data center facility and the creation and implementation of a long-term sustainability strategy to support the business.

Qualification

- Internationally and industry recognized BTEC Level 5 Diploma in Certified Data Center Sustainability

Certification

- Official Certified Data Center Sustainability Professional (CDCSP®) certification
- Use of the CDCSP post nominal title
- Use of the official Certified Data Center Sustainability Professional (CDCSP®) Digital Badge
- Use of the CDCSP® 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

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

CDCSP® Benefits for Individuals

- Be able to create and implement a strategy that attracts business and investment
- Is aware of the regulations, codes and standards affecting decisions when developing a sustainability strategy
- Understands that waste reduction, be it energy, water and packaging materials are the simplest way that the business can demonstrate its sustainability credentials
- Recognize that true sustainability starts beyond the confines of the data center walls, recognising the need to investigate the attitude to sustainability further into the supply chain

CDCSP® Benefits for Businesses

- Demonstrate a positive corporate attitude to sustainability, harnessing the potential to gain competitive advantages
- Establish a baseline for compliance recognising the need to conform with codes, standards and regulations in order to demonstrate corporate integrity
- Champion a sustainability legacy by reviewing all areas of the business processes that affect the carbon footprint, reducing operational costs in all functional areas
- Improves customer perception of your business due to strengthening attitudes for service providers that can demonstrate their sustainability credentials

Certified Data Center Sustainability Professional (CDCSP®) Topics at a Glance

Term 1 - Understanding Sustainability and the Business Approach

- **The need for sustainability and the impact upon the data center sector**
- **Sustainable approach and the legislative drivers**
- **Corporate Social Responsibility (CSR) and the wider impact on the data center sector**
- **Establishing a data center performance baseline and maximising assets**
- **Understanding the business needs and data center limitations**
- **Business and operational risks presented by the need for sustainability**
- **Creating a sustainable ethos through the business**
- **Establishing a business case for sustainability**
- **Business approach to sustainability**

Learning Objectives

- Appreciation and evaluation of the wider implications of establishing a more sustainable data center sector against the influences from both government and non-government organisational policies
- Alignment of data center sustainability strategies to meet environmental, customer and social factors through Corporate Social Responsibility (CSR)
- Create an operational baseline to understand the current status of data center energy inefficiencies and wastage, identifying and prioritising appropriate and attainable sustainability measures
- Identify the potential risks, challenges and benefits of a framework to implement sustainable initiatives
- Create a structured business case through business core drivers, risk potential, collaboration and commitment to deliver sustainability targets and strategies

Term 2 - Technological and Operational Approach to Sustainability

- **The need for innovation and collaboration**
- **Reduction of human error by effective management and training**
- **Industry best practices and transformation programs**
- **Monitoring, analysis and automation of the physical infrastructure**
- **Evaluating traditional, alternative and renewable power sources**
- **Monitoring, analysing and optimising power distribution**
- **Monitoring, analysing and optimising cooling capabilities**
- **Monitoring, analysing and optimising IT hardware deployment**
- **Maintenance strategies**
- **Aligning the business, operations and technology to deliver a sustainable path for the future**

Learning Objectives

- Critically analyse the IT environment relating to one's own sphere of work, in particular, the learner's own organisation's technical platforms
- Assess the IT/IS infrastructure (hardware, public/private/hybrid cloud, operating systems, intelligent SAN, aaS,middleware/SOA), and the IT service processes used within the learner's own organisation, particularly those associated with sustainability and efficiency including virtualisation, re-use/sharing, and closed loop strategies
- Compare and contrast the needs, objectives and constraints of the other disciplines and functions within the data center
- Evaluate and apply national and international standards published by ISO, BSI, IEC, IEEE etc and Codes of Practice to build sustainability into the data center
- Devise techniques for streamlining business processes

Term 3 - Implementing Sustainability

- **Corporate sustainability and the core drivers**
- **Strategic and sustainable planning**
- **Developing and implementing sustainable strategies**
- **The strategic planning process**
- **Projecting levels of sustainable achievement**
- **Obstacles and challenges**
- **Monitoring, analysing and reporting sustainability improvements**
- **Continuous sustainability planning**
- **Certifications, standards and industry accreditations**

Learning Objectives

- Evaluate appropriate business strategies for the initiation and development of a sustainable data center
- Create a clear business strategy and sustainability framework against defined objectives and attainable targets through business collaboration
- Identification and mitigation of potential risks, obstacles and challenges relating to effective delivery of the business strategy and sustainability outcomes
- Appreciate the need for effective monitoring, analysing and reporting structures to evaluate the financial expenditure and operational productivity against the business drivers
- Identify and utilize industry recognized standards providing direction for continuous sustainability initiatives

Masters Degree in Data Center Leadership and Management

3 Years Distance Learning

Perfect for Leaders and Senior Managers working in data center facilities

"The Masters Degree was very well delivered and met all of my expectations. I would recommend it to anybody working in the data center environment."

Masters Degree in Data Center Leadership and Management

3 YEARS DISTANCE LEARNING

Program Overview

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

The program harnesses CNet's unique insight into data center operations and expertise in business leadership and management. Topics have been selected on the basis of feedback from the industry and data center professionals who are themselves involved with delivering the program alongside other hand-picked specialists. The program is based around the learners' professional work in order to ensure that the learning is relevant and can be applied to the workplace.

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.

Learner Profile

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

Pre-requisites

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

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.

We 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 center facility
- Experience: Have at least two years at middle or senior management level in a data center 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.

Objectives

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

Qualification

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

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Masters Degree in Data Center Leadership and Management Topics

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 center 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 Center Leadership

- Evolution of leadership
- Complexity theory, dynamic organizational environments, strategic alignment in organizations, systems theory
- Emergent leadership theory in dynamic environments
- Internal business environment analysis and organizational 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 Centers

- Modular data center 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
- Maximizing system utilization for best efficiency
- Continuous commissioning
- Use of cloud technology to minimize the impact of data centers on the environment

Finance for Non-Financial Managers

- Understanding and evaluating financial statements
- Effective budgeting and control
- Choosing the most profitable investments
- Financial input for strategic and tactical decision making
- Financial skills required for senior management

Year 2 - PG Diploma (PGDip)

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

Data Center 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 centers (especially related to disaster recovery scenarios)
- Consolidation of resources/locations
- Optimizing physical infrastructure (including space management) to enable higher capacity
- Multi-layered monitoring
- Future strategic planning via modeling scenarios
- Physical security & data security
- Virtual digital security (especially in co-location environments)
- Identification of data center infrastructure risks and vulnerabilities, mitigation techniques and recovery policies
- Governance relating to data protection, safe harbor and other compliance regimes
- Evaluation metrics

HRM and Organizational Capability Development

- Managing human resources for optimal performance
- Organizational behavior
- 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 behavior 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

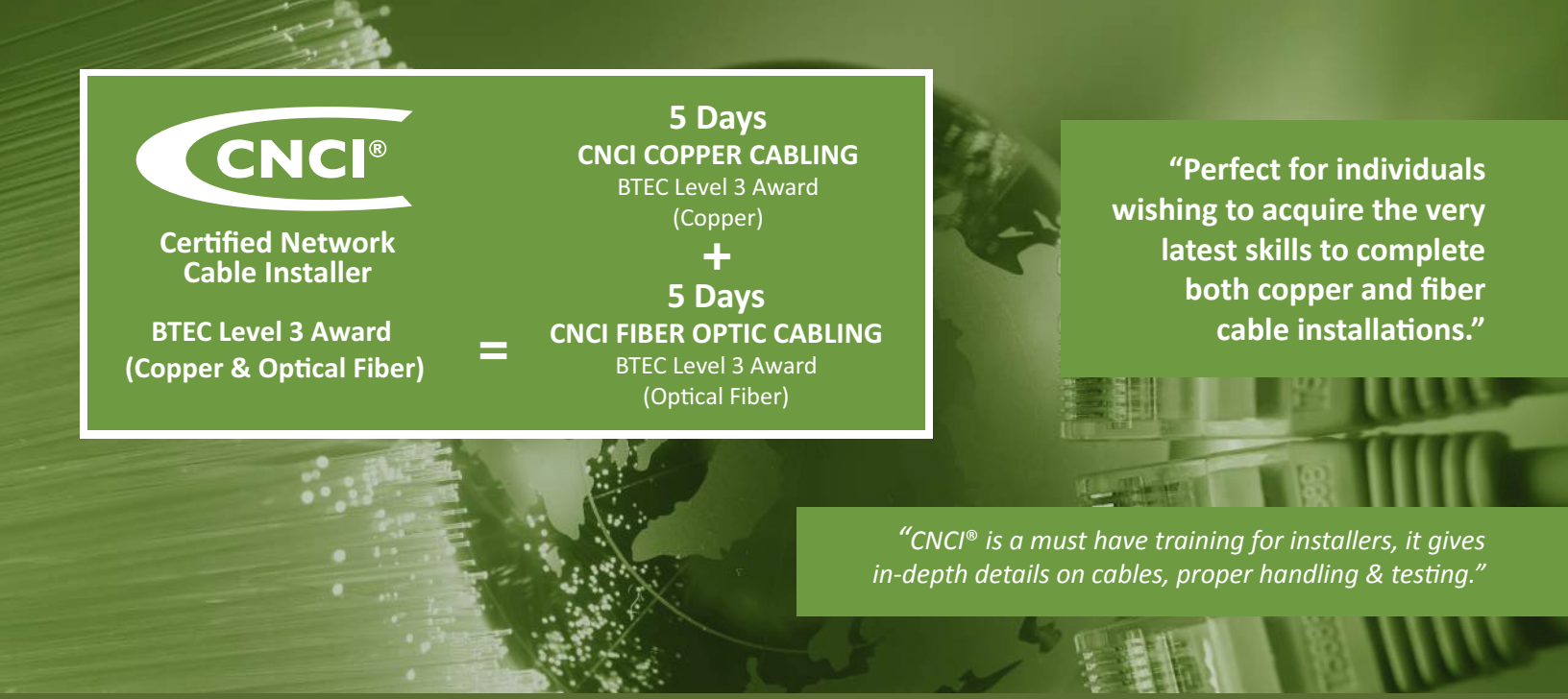
The final year expands your horizons even further, giving you the chance to develop your thought leadership and address specific business issues. First, in the "Contemporary Issues in Leadership and Management" module, you will explore themes in the data center sector and gain an in-depth understanding 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 consultancy work which could address a live issue in your workplace, or be based on a theme in the data center 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 off-shoring
- 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



Certified Network Cable Installer

BTEC Level 3 Award (Copper & Optical Fiber)

=

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

+

5 Days
CNCI FIBER OPTIC CABLING
BTEC Level 3 Award (Optical Fiber)

"Perfect for individuals wishing to acquire the very latest skills to complete both copper and fiber cable installations."

"CNCI® is a must have training for installers, it gives in-depth details on cables, proper handling & testing."

Shaping the future of the Network Infrastructure Sector

Certified Network Cable Installer (CNCI®)

10 DAY PROGRAM

Program Overview

Demonstrate the highest levels of knowledge, skills and competency in network cable infrastructure. Undertake copper and fiber cabling installation, termination and testing to the highest quality whilst complying to industry best practice and standards to ensure a right first-time approach.

The Certified Network Cable Installer (CNCI®) has become the industry preferred certification for network cable installation and is specified as a requirement on many job profiles and installation project contracts. In addition, manufacturers, major installation companies, associations and consultants endorse the certification knowing that it provides the right level of technical knowledge, competence and confidence to the industry. In recognition of the CNCI® certification many manufacturers also award accreditations towards their product warranties.

It's a comprehensive ten-day program that blends a perfect mix of technical knowledge and practical activities for both copper and fiber component installation. Official CNCI® certification proves that an individual is certified to undertake network cable infrastructure projects to the highest calibre whilst working to the current national and international industry standards and industry best practice. During the program learners will be provided a valuable opportunity to access the latest industry standards.

Having successfully completed this program, and with the appropriate level of experience, it is highly recommended that you 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 center sectors.

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

Split into:

- **5 Day CNCI® Copper Cabling Unit**
- **5 Day CNCI® Optical Fiber Cabling Unit**

Combined: 50% Theory 50% Practical

Learner Profile

The CNCI® program is perfect for individuals wishing to acquire the very latest skills and knowledge to enable them to complete both copper and fiber cable installation projects to the highest standards. It is relevant to new entrants to the network cable infrastructure sector in addition to those already working within the cable installation environment wishing to formalize their knowledge and skills.

Pre-requisites

No previous experience is required to attend this program.

Program Objectives

Successful learners will have the knowledge and skills to confidently install, test and certify a complete copper and fiber cable installation. This forms part of the entry level requirement into the Global Digital Infrastructure Education Framework which allows learners to progress their knowledge, education and skills in line with their career within these fast moving industries.

Qualification

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

Certification

- Official Certified Network Cable Installer (CNCI®) certification
- Use of the CNCI post nominal title
- Use of the official Certified Network Cable Installer (CNCI®) Digital Badge
- Use of the CNCI® 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

- Continual Professional Development (CPDs)
- 10 IEEE Continual Education Units (CEUs)

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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 the materials required, accurately and with confidence
- Demonstrate a sound knowledge of personal health and safety risks and take practical steps to mitigate them
- Confidently install copper and fiber cable correctly in accordance with industry best practice and in compliance with national and international standards
- Proficient at selecting the correct products to effectively construct pathways and containment systems to support cable infrastructure
- Install copper & fiber network cable infrastructure projects on time and within budget, maximizing profit potential
- Possess the skills and aptitude to test and certify installed copper & fiber cable infrastructure in accordance with the correct test criteria

CNCI® Benefits for Business

- Competitive edge, certified, qualified and adding value to tender responses
- 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
- Confidence that health and safety best practice is being employed, mitigating the risk of potential red card action or loss of time due to injuries
- Feel confident that capacity limits are not exceeded, therefore ensuring value for money and conformance to client requirements
- Meet contractual requirements reducing sign off and project hand over times
- Ensures that network infrastructure is fully serviceable and meets the transmission requirements of the network

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?
- Standard bodies, BSI, ISO, CENELEC, TIA/EIA
- Relationships between standards
- Categories and classes

Fire Safety
- Why fire stop?
- Types of fire stopping
- Three pillars of fire stopping
- Construction Product Regulations (CPR)

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

Copper Testing
- Copper certification
- Set up test equipment
- Test procedures
- Troubleshoot
- Test standards/limits
- Diagnostics
- HDTDX and HDTDR

CNCI® Optical Fiber Cabling

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

Network Overview
- History of fiber
- 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 fiber management, protection, patch field

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

Connectors
- Connector types
- Functionality
- Density (SFF)

Outside Plant (OSP)
- Fiber backbone to the LAN
- Hardware
- Media choice

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

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

Fiber Testing
- Tier 1 fiber certification
- Tier 2 fiber certification
- Encircled Flux (EF)
- End face inspection
- Set a reference
- OTDR event types
- OTDR Pro link testing

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

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Certified Network Infrastructure Technician

BTEC Level 4 Professional Award

5 Days

Perfect for individuals wishing to extend their knowledge into the role of Site Delivery Manager

"Best week's training I have attended in my career. The instructor was fantastic."

Certified Network Infrastructure Technician (CNIT®)

5 DAY PROGRAM

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 the 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 center sectors.

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

Program Content

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 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 added supervisory and management skills, knowledge and competency to confidently deliver complex infrastructure projects within site environments.

Qualification

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

Certification

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

Additional Awards

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

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CNIT® Benefits for Individuals

- Utilize 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 recognized qualification and official certification

CNIT® Benefits for Business

- Added supervisory skills provides the ability to realize cost efficiencies through effective planning and manpower utilization
- 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 standardized 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 fibers
  - 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

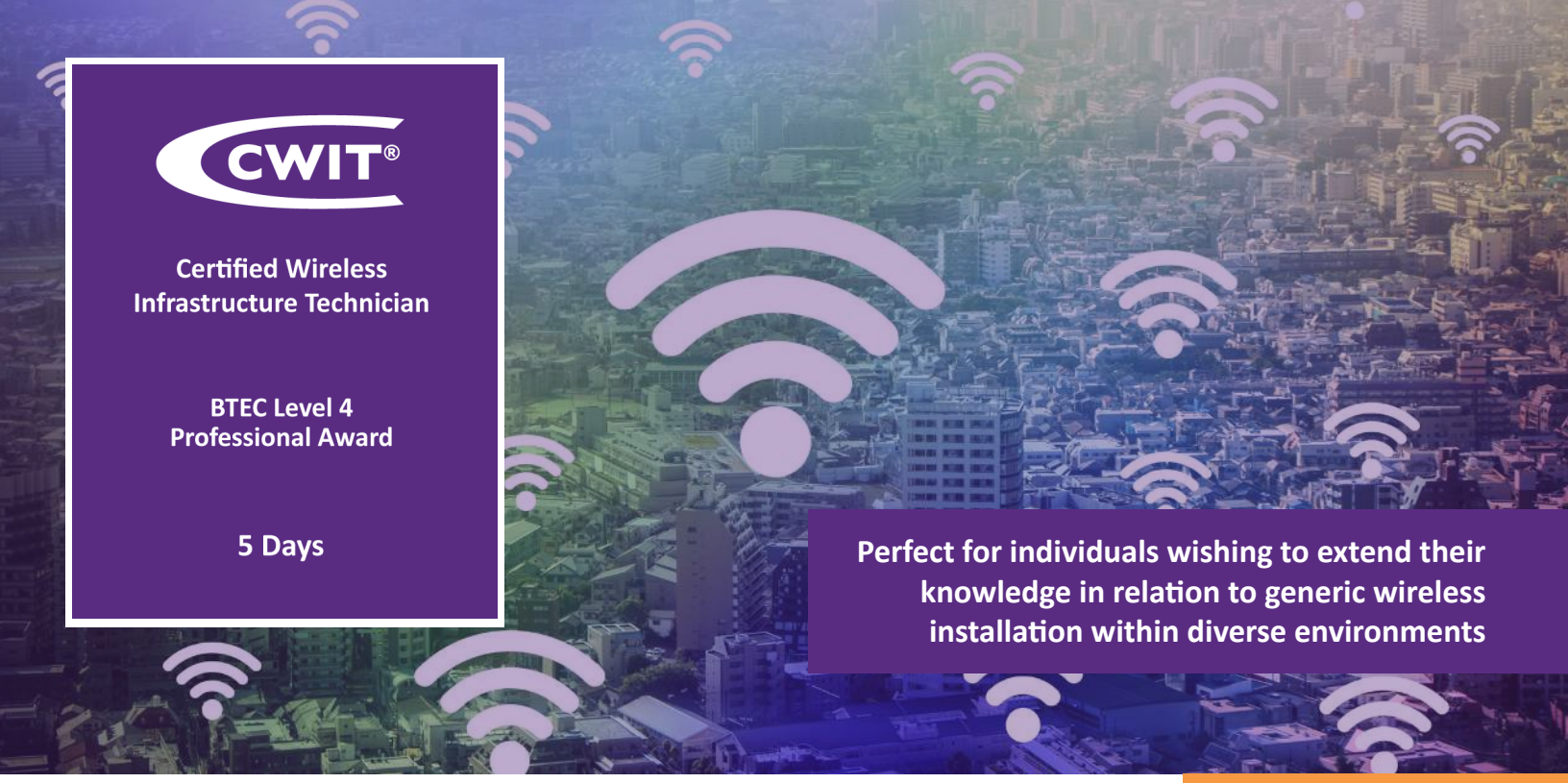
Project Closure
- Red-line drawings
- Certification
- Site closure

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

Certification	Role	Capabilities	
CNIT®	SITE DELIVERY MANAGER	Site Supervision:	Team Leadership Health & Safety Management
		Site Logistics Manager:	Task Management Stores & Equipment Co-ordination
		Technical Lead:	Surveyor Resolver Quality Assurance Project Closure



CWIT®

Certified Wireless Infrastructure Technician

BTEC Level 4 Professional Award

5 Days

Perfect for individuals wishing to extend their knowledge in relation to generic wireless installation within diverse environments

Certified Wireless Infrastructure Technician (CWIT®)

5 DAY PROGRAM

Program Overview

Plan and install a 100% wireless network coverage to facilitate high speed access for smart mobile devices. Using the latest wireless technologies ensure all users have comprehensive access at all times to benefit from a seamless roaming experience.

The five-day Certified Wireless Infrastructure Technician (CWIT®) 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 the wireless infrastructure environment.

Learners will expand their knowledge and skills to gain a thorough understanding of current and emerging wireless networking technologies used for in-building wireless coverage. Methods used for connection to backbone networks also feature with explorations into the principles of microwave access radio, fiber systems and cable technologies such as DSL. The organisation and management of site records and wireless system test results through OEM software is also included.

Practical hands-on sessions are incorporated throughout this program, including a focus on advanced wireless infrastructure troubleshooting, wireless coverage surveys and network testing tools. The organisation and management of site records and wireless system test results through OEM software is also included. A certified CWIT® will be undaunted when dealing with escalations and problem resolution within a strategic wireless network project.

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

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 center sectors.

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

Program Content

50% Theory 50% Practical

Learner Profile

This program is designed for individuals experienced within the network infrastructure installation environment wishing to extend their hands-on practical skills, knowledge, qualifications and certifications in relation to generic wireless installation within diverse environments.

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

Qualification

- Internationally and industry recognized BTEC Level 4 Professional Award Certified Wireless Infrastructure Technician

Certification

- Official Certified Wireless Infrastructure Technician (CWIT®) certification
- Use of CWIT post nominal title
- Use of the official Certified Wireless Infrastructure Technician (CWIT®) Digital Badge
- Use of the CWIT® 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

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

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CWIT® Benefits for Individuals

- New and improved technical skills, widening your scope of ability with up-to-date wireless technology
- Enhanced knowledge and skills to enable wireless network infrastructure to be planned with accuracy and confidence
- Knowledge of industry standards and best practice instils a right first-time approach increases quality, reduces time on task and improves customer
- Greater job role flexibility to further enhance career opportunities

CWIT® Benefits for Business

- Ability to broaden product portfolio into wireless technology delivery
- Improve accuracy and planning reduces errors, risk and potential costs associated with re-work
- Ensure works are completed to the highest quality standards, reducing snagging and the time and cost of site re-visits
- Investment in the team, leads to greater loyalty, reducing potential recruitment time and cost to replace dissatisfied leavers

Certified Wireless Infrastructure Technician (CWIT®) Topics

CWIT®

Role of the CWIT® in:

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

Regulations, Standards, Codes, Organisations and Forums

- Wireless regulations, standards, codes and organizations
- Wireless trade organizations and forums
- Emerging wireless technologies and related standards

Fundamentals of Wireless Communications

- Wireless medium/spectrum
- Advantages of the wireless solutions
- RF propagation
- Modulation schemes

Wireless Networking Principles

- Cellular, WLAN, PAN and Microwave technologies
- Femto/Pico/Micro and Macrocells
- WLAN types
- Frequency Bands and Channel Numbers
- Core Networks
- NMS vs. EMS
- CLI vs. GUI
- TX/RX Diversity, MIMO antenna schemes
- Remote Radio Head (RRH)
- PoE Switches
- Self-Organizing Networks (SON)
- Network and Security Gateways
- Coverage and Capacity planning - overview
- Optimal positioning of RF units
- Standards

Planning for In-Building Installations

- On-site health and safety assessment
- Wireless infrastructure administration and floor plans
- Capacity & Coverage plans arising from use of planning tools
- Ethernet and fiber cable route planning
- Equipment mounting choices and types
- Iteration process – ideal vs. practical choices
- Rack space and equipment connection planning
- AC/ DC planning
- Ventilation planning

In-Building Installations

- Structural support for wall and ceiling RF unit fixings
- Tools used for wall and ceiling fixings
- PPE, steps, ladders, towers used during mounting of RF units
- Installation of PoE switches and servers
- Connection and earth and AC/DC power
- Testing and connection of Ethernet and optical fiber cables
- Capturing MAC addresses & updating as-built documentation

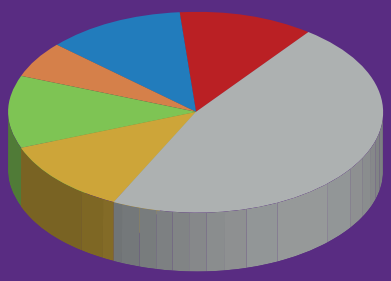
In-Building Commissioning

- Powering up switches and servers
- Use of CLI and GUI
- Entry of initial parameters to enable SON
- Checks: RF coverage, handover, provision of service
- Optimization of RF coverage through physical adjustments
- Use of test phone
- Documenting test results
- Typical troubleshooting: Ethernet/ fiber cable tests, pings

Wireless Infrastructure Troubleshooting

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

CWIT® Program Breakdown



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

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CIIT®

Certified Integrated Infrastructure Technician

BTEC Level 4 Professional Award

5 Days

Perfect for individuals wishing to extend their knowledge surrounding the installation and commissioning of intelligent network devices

"I can't say enough how great I found the program. Really happy with the content and materials and I can take this forward into my day-to-day work."

Certified Integrated Infrastructure Technician (CIIT®)

5 DAY PROGRAM

Program Overview

Take your existing network infrastructure skills to new technical levels, developing 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 also site and mount equipment to optimize coverage and direction, and will commission and configure devices into service. Such devices include wireless access points, AV systems, CCTV cameras, security control systems (both swipe access and biometric).

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 center sectors.

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

Program Content

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, VoIP telephony, CCTV cameras, door access controls and biometric security systems.

Qualification

- Internationally and industry recognized BTEC Level 4 Professional Award Certified Integrated Infrastructure Technician

Certification

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

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

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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 recognized 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
- Realize cost savings through greater efficiencies

Certified Integrated Infrastructure Technician (CIIT®) Topics

CIIT®

Role of the CIIT®

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

Data-communications

- Binary coding
- Internet protocol
- IP addressing

Standards and Compliance

- BSEN 50173-6
- Legislation and regulation
- Compliance
- Warranties

Power over Ethernet

- Concept
- PoE standards and power ratings
- Power considerations and media selection
- PoE injection devices
- Network segregation

Virtual Local Area Networks

- VLAN structure
- Planning the VLAN
- Switch configuration
- Network security

Integrated Network Architecture

- PoE capable technology
- Bandwidth demand
- Planning
- Media considerations

Network Commissioning and Troubleshooting

- BSEN 50174 quality standards
- Network warranty
- Commissioning PoE channels

Practical Installation Tasks

- Prepare, install and commission
  - 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.

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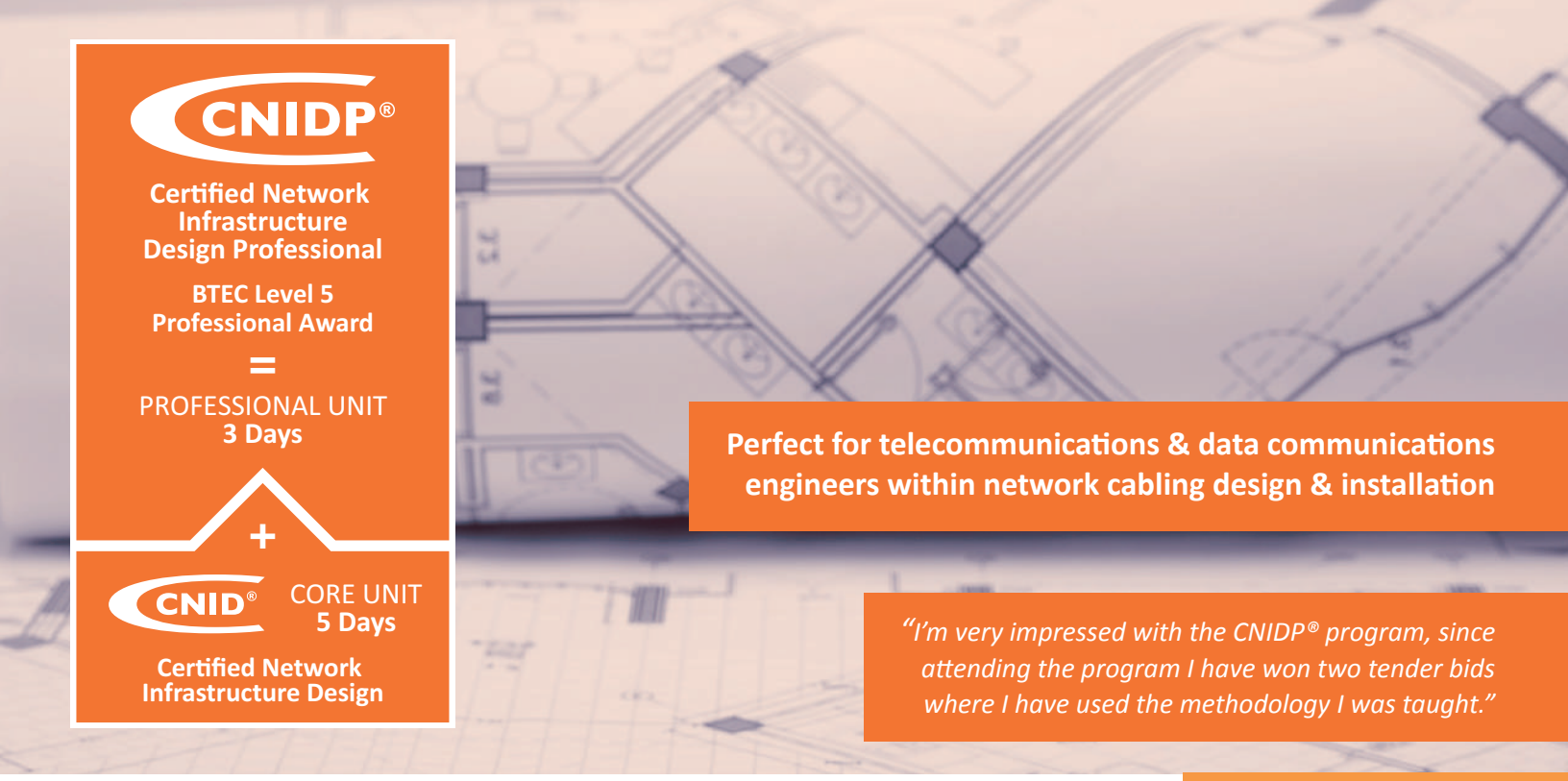


Perfect for telecommunications & data communications engineers within network cabling design & installation

"I'm very impressed with the CNIDP® program, since attending the program I have won two tender bids where I have used the methodology I was taught."

Certified Network Infrastructure Design Professional (CNIDP®)

8 DAY PROGRAM

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 emphasized 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 maximized 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 a 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 center sectors.

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

Split into:

- **5 Day Certified Network Infrastructure Design (CNID®) Core Unit**
- **3 Day Certified Network Infrastructure Design Professional (CNIDP®) Unit**

Combined: 40% Theory 60% Practical

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 fiber 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 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 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.

Qualification

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

Certification

- Official Certified Network Infrastructure Design Professional (CNIDP®) certification
- Use of the CNIDP post nominal title
- Use of the official Certified Integrated Infrastructure Technician (CNIDP®) Digital Badge
- 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

- Continual Professional Development (CPDs)
- 8 IEEE Continual Education Units (CEUs)

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 organizations
- Cabling standards
- Installation standards
- Electrical standards
- Network and application standards
- Building Information Modeling (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

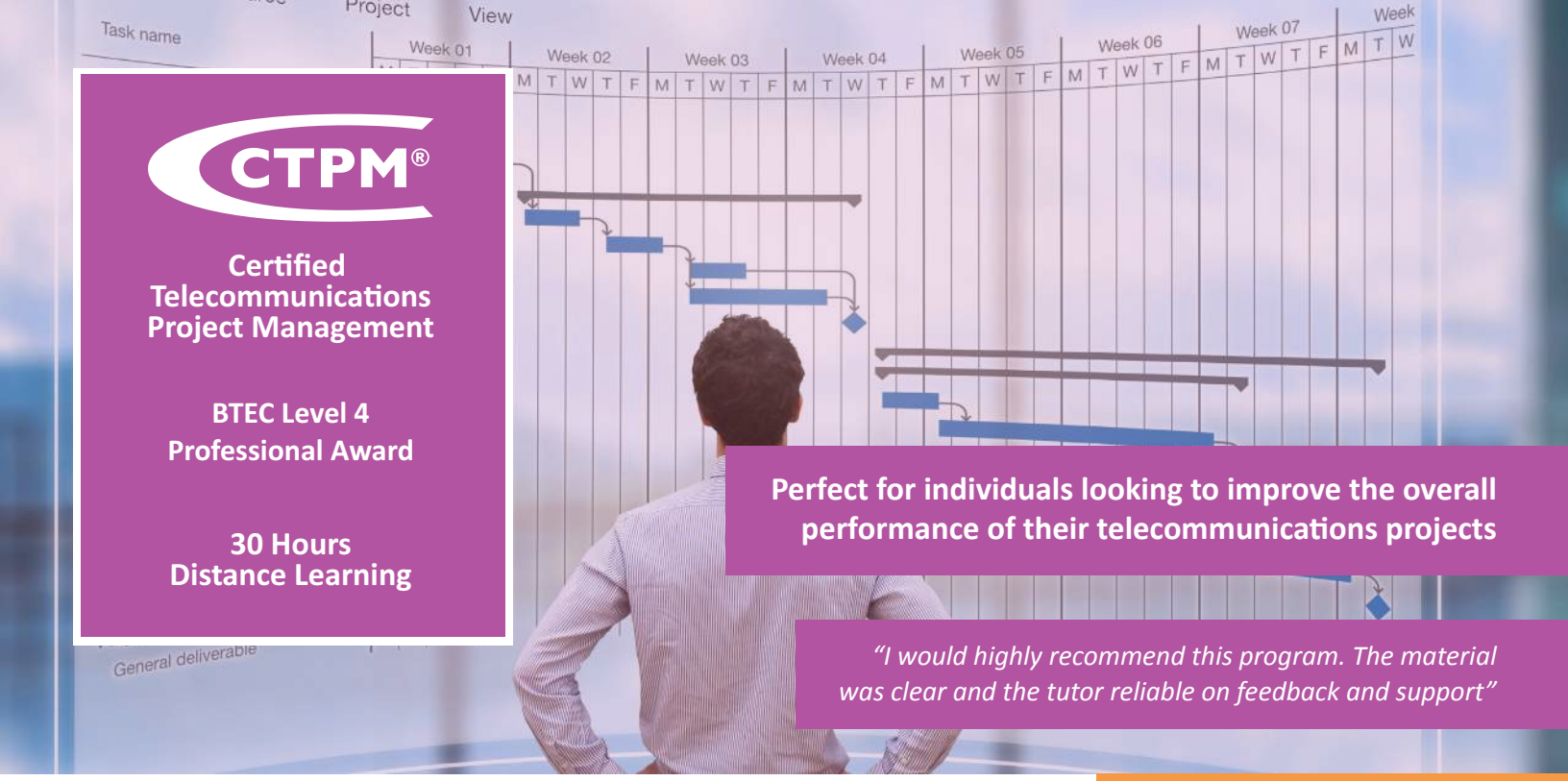
Bid Evaluations & Contract Negotiations
- Bid evaluation techniques
- Shortlist interviews
- Contract negotiations
- Contract award

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.



Certified Telecommunications Project Management

BTEC Level 4 Professional Award

30 Hours Distance Learning

Perfect for individuals looking to improve the overall performance of their telecommunications projects

"I would highly recommend this program. The material was clear and the tutor reliable on feedback and support"

Certified Telecommunications Project Management (CTPM®)

30 HOURS DISTANCE LEARNING

Program Overview

Add significant value to project delivery through a high-quality structured project management process that is standardized, 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.

There are seven assignments to complete and they are assessed individually and combine to create a complete project plan:

- 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?

Learner Profile

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

Pre-requisites

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

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.

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.

Qualification

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

Certification

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

- Continual Professional Development (CPDs)
- 3 IEEE Continual Education Units (CEUs)

> "We used the training for the CTPM® as a team building event... I've got to say that the whole experience was thoroughly enjoyable and sparked some interesting conversations."
>
> DATA CENTER MANAGER

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CCAM® Competency & Confidence Assessment Modelling

The World's First Competency & Confidence Assessment Modelling (CCAM®) Tool for the Data Center Sector available only from CNet Training.

Risk affects every organization, although the types of threats that businesses face will depend on varying factors, yet many businesses struggle to accurately identify and counter risks effectively.

CNet Training has launched the world's first Competency and Confidence Assessment Modelling (CCAM®) Tool for the data center sector and has the ability to revolutionize the way data center managers identify, manage and mitigate people risk.

The CCAM® Tool provides real-time analysis of both competence and confidence for individuals and teams and exposes root causes of employee behaviour (positive and negative) in data center facilities. Its proven complex software, which is supported by a team of psychologists and operates within International Test Commission guidelines, works through various criteria to identify people risk. It focuses on where individuals' real skills, knowledge and ability gaps are and, through subsequent targeted intervention, behaviour can be positively changed and subsequently risks reduced.

The results of each assessment allow the right course of development action to be planned and taken to address individuals' weaknesses, and with the ability to take the CCAM® Tool assessment again post-development, it ensures any costs incurred have been utilized effectively, thus maximizing the opportunity to achieve ROI. It can also be used as a valuable pre-employment tool allowing managers to understand the development investment required for potential new staff.

Is your Business at Risk?

On average 79% of all staff pose some or significant risk to the business - this risk can be mitigated.

1. Can achieve **OPTIMAL PERFORMANCE** High Understanding / High Confidence	21%
2. Have immediate **KNOWLEDGE GAPS** Lack of Understanding	50%
3. Are potentially at **RISK** Misunderstand / Misplaced Confidence	29%

What is CCAM®?

- An SaaS based people risk platform
- Identifies, manages and mitigates people risk
- Provides real-time analysis of both competence & confidence for individuals and teams
- Identifies misplaced confidence
- Exposes the root causes of employee behaviour in mission critical environments
- Helps to manage and build teams and competencies
- Uncovers skills, knowledge and ability gaps
- Saves money whilst maximizing ROI

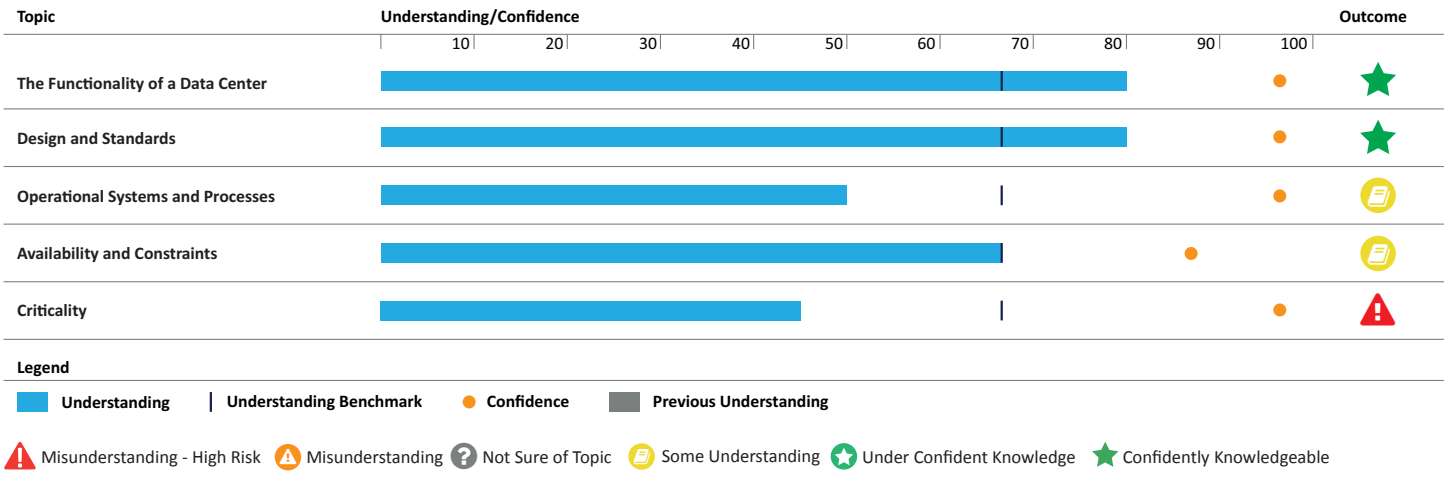
The CCAM® Tool provides an analysis of, and scores, each individual within your team to identify:

- Current employee behaviour
- What each employee - UNDERSTANDS, DOES NOT UNDERSTAND, MISUNDERSTANDS, including current confidence levels
- Which employees are going to - apply what is RIGHT, apply what is WRONG
- Where the knowledge, skills and ability gaps are
- Where the risk is
- Where development budget needs to be allocated
- The scoring provides a thorough overview of each individual and your entire team. You set an ideal score to show where you would like to be and this can be used as a benchmark against

Understand/Confidence Graph

Below is an example of the underpinning knowledge assessment of Data Center Technicians and Supervisors outlining the average level of understanding and confidence for an individual and shows the understanding benchmark.

Data Center Technicians and Supervisors - Underpinning Knowledge Assessment



CNet Training is an Associate College of Anglia Ruskin University (ARU) in Cambridge, UK

What is an Associate College?

An Associate College status confirms a long-term working relationship with the University with the intention of providing quality education opportunities with a commitment to lifelong learning. CNet Training has worked closely with Anglia Ruskin University (ARU) in Cambridge, UK, for a number of years and this status confirmed the company's full responsibility for the design and delivery of the world's only Masters Degree in Data Center Leadership and Management. The Masters Degree qualification is still awarded by ARU with a full graduation ceremony, and this high level qualification continues to be recognized with the same integrity of all the other ARU qualifications.

The Associate College status carries with it robust quality and academic standards, which CNet Training is proud to uphold. ARU undertake on-going inspections to ensure the Masters Degree program continues to reach desired quality standards, and, being a CNet Training program, it also conforms to the ISO standard that CNet Training adheres to. This quality focus ensures learners can be confident that they are receiving the best education possible.

What are the Benefits of the Associate College Status for CNet Training?

- It provides full responsibility for the Masters Degree program content to be designed and delivered by CNet Training, ensuring content can evolve and be updated in-line with sector requirements and reflect the latest trends and sector focuses
- CNet Training treat the content design of the Masters Degree program inline with all the technical education programs from The Global Digital Infrastructure Education Framework, whereby the content is regularly reviewed, refreshed and scoped in collaboration with global influencers and leaders from the industry itself
- CNet Training can also promote the Associate College status alongside the University's name and logo

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Clients

CNet Training is under confidentiality with many clients, however here are some we can mention:

Customer Focused ▶▶
Quality Driven ▶▶▶▶

The **Global Leader** in **Technical Education** for the **Digital Infrastructure Industry**

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