



COMMONWEALTH  
TELECOMMUNICATIONS  
ORGANISATION

# CAPACITY BUILDING FOR DEVELOPMENT IMPACT



COURSE CATALOGUE 2024

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# Overview

# Introduction



**In 2023 the Commonwealth Telecommunications Organisation (CTO) defined a new strategic course to support members' digital transformation aspirations. In keeping with this course, the CTO developed a new approach to human capacity development, the goal of which is to train members to implement information and communication technologies (ICT) solutions in their operations to support the attainment of the United Nations Sustainable Development Goals.**

To achieve the new strategic goals, the CTO restructured its secretariat and streamlined its operations to support the formulation and accelerated implementation of members' digital transformation plans. Consequently, the CTO focus on building human capacity, by raising awareness and providing training on all aspects of ICT to enable its members to effectively adopt appropriate digital technologies and successfully implement their transformation plans.

The CTO is pleased to present its inaugural Capacity Building for Development Impact (CBDI) course catalogue with training programmes that are designed to equip members with the necessary knowledge, skills and competencies that would enable them to successfully implement their digital transformation strategies. The courses will be developed based on the needs of the member and customised to address the challenges that they have identified. The training methodologies employed may be blended and will incorporate self-directed, experiential learning that allow learners to apply the learnings to solve real issues in their work environments.

Upon completion of training programmes, learners will be evaluated in the form of knowledge tests and examinations to gauge their level of understanding. Measurement of impact at organisation and national level shall be applicable to technology application trainings.

# Why choose CTO CBDI courses?



Recognising the rich diversity within the Commonwealth, the CBDI programme is designed to tailor courses to meet the unique needs of each organisation. Our courses utilise the most suitable delivery methods for each subject, offering a blend of online and in-person modes to ensure flexibility in scheduling and timetables.

Participation in the CBDI programme not only enhances the participant's skills but also broadens career prospects, increasing employability in today's competitive job market. Moreover, the CTO is committed to delivering these high-quality courses in a cost-effective manner, ensuring the best value for the investment.

Join us at CTO and take the next step in your professional journey.





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# Technology-based courses

# Artificial intelligence



## Introduction

Artificial intelligence (AI) is the capability of digital computers or computer-controlled devices and robots to perform tasks typically associated with intelligent beings. These tasks encompass reasoning, discovering meaning, generalising, and learning from past experiences.

Since the advent of digital computers in the 1940s, there has been significant progress in developing systems capable of carrying out complex tasks, such as proving mathematical theorems or playing chess. Despite these advances, AI is still far from achieving the full flexibility and breadth of human intelligence. Nevertheless, AI applications have made significant strides in specific domains, including medical diagnosis, communication tools, interpretation of surroundings, predictive modelling, search engines, voice recognition, and chatbots.

The impact of AI spans various sectors, including education, transportation, healthcare, finance, agriculture, tourism, gaming, automotive, and manufacturing. AI plays a significant role in helping businesses increase efficiency through the automation of manual routine tasks, decrease operational costs, grow revenue, and enhance customer experience. Whether used alone or combined with other technologies such as IoT, AI can contribute significantly to any digital transformation programme.

Like any other emerging technology, AI presents a host of challenges. These challenges necessitate the formulation and implementation of robust policies and regulatory frameworks to guide the responsible development and deployment of AI systems. Ensuring ethical use, transparency, accountability, and fairness are critical aspects that need to be addressed as AI continues to evolve.

This course aims to equip participants with foundational and more advanced skills in AI technologies and machine learning. During the course, you will explore and master technologies that have the potential to revolutionise the world. These include intelligent chatbots capable of understanding and communicating like humans; techniques for extracting valuable insights from Big Data, which could lead to disease prediction and life-saving applications; insights into the leadership role necessary for successful AI implementation; and considerations related to ethics and regulations in the AI landscape. By the end of this course, you will be well-prepared to navigate the exciting and transformative field of AI.

# Artificial intelligence



## Learning outcomes

- ✓ Understanding and applying the concepts of AI in any environment.
- ✓ Gaining knowledge on the requirements for setting up AI.
- ✓ Understanding on how to keep people secure with AI.
- ✓ Gain knowledge on the legislative and policy controls for AI.
- ✓ Understanding the practical steps for effective adoption of AI.

## Course structure

*The course consists of four modules as shown below.*

### Module AI01

#### Overview and definition of AI

This module will give an overview and concept of the AI technology, its potential, objectives, and goals. It will also explore the pitfalls and the risks involved with adoption of the technology.

Introducing the concepts

Pros and cons of AI

Future of AI and machine learning

Risks and challenges involved with AI

### Module AI02

#### Adoption of AI

This module explores the applications and tools needed for the adoption of AI.

Infrastructure design

Hardware/software

Networks

Access

### Module AI03

#### Controls and security for adoption of AI — keeping people secure with AI

Policy and regulation

Ethical considerations

Security solutions

### Module AI04

#### Implementing AI

Application of AI in knowledge management era

Frameworks for implementation of AI

Leadership attributes for implementation of AI

Challenges in implementing AI

## Target audience

- ✓ Employees with two or more years working experience in the ICT industry.
- ✓ IT specialists in computer hardware, software and data scientists.



# Internet of things (IoT)



## Introduction

The Internet of Things (IoT) is a vast network that connects billions of physical devices, from ordinary appliances to sensors and actuators, to the internet. These devices have the capability to collect and share information with each other, operating autonomously without the need for human intervention. Moreover, these devices can connect, process, and store information.

Applications of IoT have the potential to transform all aspects of our daily lives. They provide numerous benefits, such as enabling control of home appliances, monitoring health via wearable devices, and offering navigation and control for autonomous vehicles. Additionally, IoT provides numerous opportunities to enhance government services by supplying real-time information for decision-making.

This course offers training on the essential aspects of IoT, encompassing both the technical and commercial factors relevant to its deployment. It provides a proven approach that assists participants in identifying specific use cases where the deployment of IoT can directly benefit their organisation or country. These use cases may cover a variety of domains, including smart metering, agriculture, healthcare, education, and transportation. By the conclusion of this course, participants will be well-prepared to harness the transformative potential of IoT in their respective fields.



# Internet of things (IoT)



## Learning outcomes

- ✓ Understanding elements of the IoT ecosystem, its benefits and opportunities.
- ✓ Knowledge and understanding of the software requirements for deploying IoT.
- ✓ Understanding the distinction between IoT and traditional telecoms services.
- ✓ Knowledge and understanding on the requirements and options for connecting IoT devices.
- ✓ Understanding the security measures/controls and regulatory implications for the deployment of IoT.
- ✓ Knowledge and understanding on selecting vendors and evaluation.
- ✓ Practical steps to deploying IoT for development Impact.

## Course structure

*The course consists of four modules as shown below.*

### Module IoT01

#### Overview of IoT

Introduction to IoT  
 Elements of IoT ecosystem  
 Technology and business drivers  
 IoT applications, trends and implications  
 Identifying opportunities  
 Use case scenarios

### Module IoT02

#### Adoption of IoT

Understanding infrastructure design for deploying IoT  
 Application architecture  
 Hardware and software capabilities  
 Network and access requirements  
 Exploring options for connecting IoT devices i.e., cellular, short range etc

### Module IoT03

#### Controls and security for adoption of IoT

Securing deployments  
 Regulatory and ethical considerations

### Module IoT04

#### Implementing IoT

Frameworks for implementing IoT.  
 Project selection and prioritisation

## Target audience

- ✓ Employees with two or more years working experience in the ICT industry.
- ✓ IT specialists in computer hardware, software and data scientists.

# Blockchain technology



## Introduction

Blockchain serves as an unchangeable ledger that streamlines the recording of transactions and asset tracking within a business network. The restricted-access ledger, accessible only to authorised members, manages both tangible and intangible assets. This system significantly bolsters security and fosters trust within businesses. Moreover, it possesses the ability to harmonise and interlink supply chains by bridging business operations and financial aspects across the ecosystem, including government bodies and academic institutions. By enhancing security, ensuring transparency, enabling instant traceability, and streamlining processes, it cultivates trust among trading partners and expedites issue resolution.

Among the benefits provided by blockchain technology are cost reduction from overheads and transaction costs, and the elimination of the need for a third party for transaction verification. In addition, blockchain ensures increased speed, efficiency, and automation.

Numerous sectors and business industries are benefiting from blockchain technology, such as healthcare, insurance, governments, trade, and food supply. By leveraging blockchain, these sectors can enhance their operations and provide better services.



# Blockchain technology



## Learning outcomes

- ✓ Defining blockchain technology, foundations and concepts.
- ✓ Explain the benefits and need for blockchain.
- ✓ An understanding of the blockchain structures and basic operations.
- ✓ An understanding of blockchain solutions and their relevance to the business.
- ✓ Defining business case for blockchain solutions
- ✓ Identifying the right solutions for the business and the challenges of adoption.
- ✓ Recognising the opportunities for blockchain technology and avoiding pitfalls

## Course structure

*The course consists of four modules as shown below.*

### Module BT01

#### Overview of blockchain technology

Definition of blockchain technology

Fundamentals and concepts of blockchain technology

Blockchain structure and basic operations

Benefits and need for blockchain technology.

Recognising opportunities and avoiding pitfalls

Difference between public and private blockchain

Use case scenarios

### Module BT02

#### Adoption of blockchain technology

Infrastructure design

Hardware/software capabilities

Network and access requirements

### Module BT03

#### Controls and security for adoption of blockchain technology

Establishing trust in data

Elements of trust in blockchain

Platforms for validating the authenticity of data

Regulatory considerations

### Module BT04

#### Implementation of blockchain technology

Frameworks for implementing blockchain technology

## Target audience

- ✓ Employees with two or more years working experience in the ICT industry.
- ✓ IT specialists in computer hardware, software, and data scientists.

# Big data analytics



## Introduction

Big data analytics involves dealing with data sets that are extremely large and diverse, encompassing structured, unstructured, and semi-structured data from various sources and of different sizes. Traditional databases cannot accommodate the capacity of such large and diverse data sets. Emerging technologies, such as Artificial Intelligence, have significantly contributed to the complexity associated with generating data from multiple diverse sources. These sources include mobile devices, social media, the Internet of Things (IoT), sensors, devices, video/audio, networks, and log files.

Despite the complexities of generating data from diverse sources, businesses are now recognising the importance of collecting real-time information. The benefits of this approach include cost reduction in data storage, faster and better decision-making, as well as the development and marketing of new products and services.

This programme aims to provide participants with an in-depth understanding of data analytics for business intelligence, statistical analysis, exploratory data analysis, as well as data analytics techniques and tools. The programme includes practical, hands-on exercises on data cleaning.

If you're looking to enhance your skills in data analytics or considering a career change to become a data analyst, then this course is for you.



# Big data analytics



## Learning outcomes

- ✓ Define and evaluate fundamental concepts and principles in big data analytics.
- ✓ Discuss the key concepts, benefits and challenges of big data analytics.
- ✓ Understanding ethical and regulatory requirements on data collection and storage
- ✓ Understanding data technologies.
- ✓ Discuss data analytics for business intelligence and growth.

## Course structure

*The course consists of four modules as shown below.*

### Module BDA01

#### Overview of big data analytics

Introduction to data analytics  
Benefits of big data analytics in business  
Significance of big data roles in the workplace  
Use case scenarios

### Module BDA02

#### Adoption of big data analytics

Data analytics tools and software.  
Application architecture  
Hardware and software capabilities  
Network and access requirements

### Module BDA03

#### Controls and security for adoption of big data analytics

Privacy and security issues in data analytics  
Regulatory and ethical considerations.

### Module BDA04

#### Implementing big data analytics

Frameworks for implementing big data analytics  
Understanding implementation costs.

## Target audience

- ✓ Employees with two or more years working experience in the ICT industry.
- ✓ IT specialists in computer hardware, software and data scientists.

# Cloud computing



## Introduction

Cloud computing is one of the emergent technologies that has disrupted the information communication Technology industry. In comparison to the traditional onsite IT, cloud computing has been seen to provide many benefits such as cost cutting, less maintenance and increased capacity of data, which is why it is widely adopted across the world.

Cloud computing, referred to as internet-based computing, makes provision for the storing and on-demand accessing of data and programmes via the internet to computing resources and servers hosted at a remote data centre instead of computer's hard drive or local servers. The servers are managed by cloud services provider and are available to clients at a monthly subscription fee. This has given clients the flexibility of 'Pay as you go'. The data that can be hosted by the cloud services provider includes files, images, documents and any manner of storable documents. Office 365 is a typical example of cloud computing where clients are allowed to store, access

and edit their MS Office documents online without necessarily installing the programme on their devices.

This programme is designed to equip the participants with knowledge and skills on cloud computing and how they can identify the opportunities for cloud computing in their organisations as well as the benefits. The course provides in-depth understanding of the essential characteristics, the structures and architecture of cloud computing. In addition, the programme will highlight the components, models and categories of cloud computing. Lastly the participants will have an appreciation of the emerging trends and practices such as edge and green cloud computing, and how these practices are likely to impact their organisations.

If you are an IT professional seeking to upgrade your skills and enhance your employability, then this course is for you!



# Cloud computing



## Learning outcomes

- ✓ A comprehensive understanding of cloud computing, overview, and benefits of cloud computing.
- ✓ Understanding the core concepts, principles, and essential characteristics of cloud computing.
- ✓ Define the various models and services in cloud computing.
- ✓ Identify the different types of cloud services and their use cases.
- ✓ Understand the architecture of cloud computing systems, including virtualisation, software-defined networks, and storage.
- ✓ Understanding of the programming models for cloud computing systems.
- ✓ Analyse the security and privacy issues in cloud computing systems.
- ✓ Recognising legal, social, ethical, and professional issues in cloud computing.

## Course structure

*The course consists of four modules as shown below.*

### Module CLC01

#### Overview of cloud computing

Definition of cloud computing  
Benefits of cloud computing  
Essential characteristics of cloud computing  
Recognising opportunities and avoiding pitfalls  
Defining business case for cloud computing  
Use case scenarios

### Module CLC02

#### Adoption of cloud computing

Application architecture  
Hardware and software capabilities  
Network and access requirements

### Module CLC03

#### Controls and security for adoption of cloud computing

Legal, social, ethical and professional issues in cloud computing  
Regulatory considerations

### Module CLC04

#### Implementing cloud computing

Frameworks for implementing cloud computing  
Understanding implementation costs

## Target audience

- ✓ Employees with two or more years working experience in the ICT industry.
- ✓ IT specialists in computer hardware, software and data scientists.



# Fifth-generation mobile networks (5G)



## Introduction

5G is the new generation of wireless technology, designed to increase the speed and responsiveness of wireless networks thus supporting significantly faster mobile broadband speeds and heavier data usage than 4G and other generations. The technology is expected to enable the full potential of internet of things. 5G is already being used and trialled across sectors and industries.

In contrast to 4G, which uses large cell towers and high-powered transmitters and antennae to transmit signals over longer distances, 5G employs multiple small cell stations for signal transmission. The significance of small cell stations is largely attributed to the fact that 5G relies heavily on the millimetre wave spectrum to generate high internet speed at 20 gigabits per second over short distances. The speed is believed to exceed wireline network speeds and offer latency of below 5 milliseconds.

5G has been successfully implemented in the agricultural, health, and transport sectors, offering numerous benefits for the enablement of smart offices, smart cities, and smart homes.

This non-technical programme aims to equip participants with a comprehensive understanding of 5G concepts. The focus will be on 5G network architecture, spectrum, 5G applications, deployments, and use cases. Additionally, the course will delve into the exploration of new 5G technologies and the Internet of Things.



# Fifth-generation mobile networks (5G)



## Learning outcomes

- ✓ Define the fundamentals of 5G, the key technologies and their impact on future wireless communication systems.
- ✓ Explain the benefits of 5G in comparison to 4G and other generations.
- ✓ Understanding of the 5G networks architecture.
- ✓ Understanding of the security and controls for the deployment of 5G.
- ✓ Understanding of the 5G deployment strategies and frameworks.

## Course structure

*The course consists of four modules as shown below.*

### Module FGMN01

#### Overview of 5G

Definition of 5G technology

Benefits of 5G

5G limitations and challenges

Use case scenarios

### Module FGMN02

#### Adoption of 5G technology

Architecture of 5G networks

Hardware and software capabilities

Access requirements

### Module FGMN03

#### Controls and security for adoption of 5G

Legal and regulatory considerations

### Module FGMN04

#### Implementing cloud computing

Frameworks for implementing 5G

Understanding implementation costs

## Target audience

- ✓ Employees with two or more years working experience in the ICT industry.
- ✓ IT specialists in computer hardware, software and data scientists.

# Spectrum management



## Introduction

Electromagnetic waves form the foundation of wireless communications. The part of the electromagnetic spectrum, known as the radiocommunications spectrum, which includes frequencies ranging from 1 Hz to 3000 GHz, is universally used to carry information wirelessly for numerous vital wireless terrestrial and space services. These services range from television and radio broadcasts to mobile phones, Wi-Fi, and satellite communications. Spectrum management is the process by which radio communications frequencies are regulated to promote efficient use and foster social benefit.

The Internet of Things, the hyper-connectivity of devices and people on land, sea, and in space, and consumers' insatiable demand for bandwidth-intensive innovative services are fuelling the demand for spectrum. As the spectrum is a limited but reusable resource, governments around the world must ensure that radio spectrum is used efficiently.

On the other hand, existing regulatory policies on spectrum management lack coherence as they do not encourage flexible frequency utilisation and opportunistic spectrum access in cellular systems.

This course aims to equip participants with the knowledge and skills necessary to address the challenges related to spectrum management. The course delves into various aspects of spectrum allocation, including economic, regulatory, technical, and policy perspectives. Additionally, it explores the key drivers shaping future spectrum usage and emphasises the factors that regulatory bodies must consider. Participants will also gain insights into spectrum allocation tools, licensing, and business models supporting wireless broadband. By integrating theory with practical applications, the course provides strategies and frameworks for achieving a net social benefit.



# Spectrum management



## Learning outcomes

- ✓ Understanding of spectrum policy and management.
- ✓ Understanding of the issues and challenges in spectrum management.
- ✓ Understanding of economic policy, regulatory and competition perspectives of spectrum management.
- ✓ Utilising the tools to improve broadband coverage using spectrum assignment.

## Course structure

*The course consists of four modules as shown below.*

### Module SPM01

#### Overview of spectrum management

Introduction to spectrum management.  
Spectrum management best practices.  
5G limitations and challenges  
Use case scenarios

### Module SPM02

#### Planning for spectrum

Spectrum requirements

### Module SPM03

#### Controls and security for adoption of 5G

Economic policy, regulatory and competition perspectives of spectrum management

### Module SPM04

#### Implementing spectrum

Frameworks for implementing 5G  
Spectrum allocation tools, licensing, and business models  
Understanding implementation costs

## Target audience

- ✓ Employees with two or more years working experience in the ICT industry.
- ✓ IT specialists in computer hardware, software and data scientists.

# Governing cybersecurity



## Introduction

The Information and Communication Technology (ICT) industry has experienced exponential growth in the last few decades, giving rise to a hyperconnected world in which everyday activities are increasingly conducted over global ICT networks. While tremendous business benefits are evident, the rise in cyber-attacks and cybercrime presents a challenge that businesses and governments must address. According to a report by IBM, cybercrime will cost the global economy \$10.5 trillion per year by 2025.

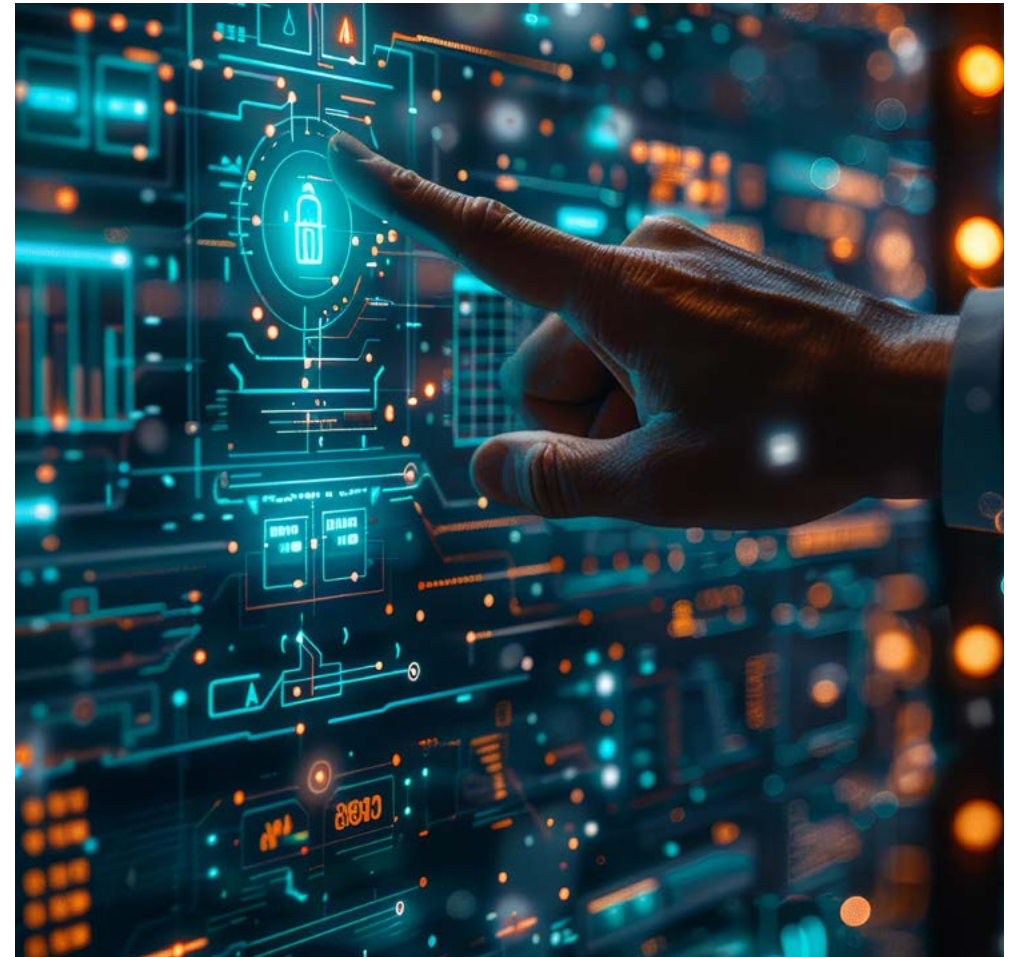
Cybersecurity frameworks establish the necessary measures and practices to protect systems, networks, and programs from digital attacks. Cyberattacks may range from simply interrupting normal business processes to targeting, accessing, changing, or destroying sensitive information, as well as extorting ransoms from users.

The challenges that organisations face today are largely attributed to the fact that the implementation of effective cybersecurity measures is complex, considering the integration of many devices and the lack of skilled cybersecurity specialists

and practitioners. Secondly, attackers are becoming more knowledgeable and innovative, gaining an advantage over the practices adopted by many organisations. Lastly, the costs of recovering from network and data breaches can be significant. The average cost of a data breach in 2023 was \$4.45 million.

Governments and businesses are under pressure to secure their digital assets and critical infrastructure, such as power plants, hospitals, airports, and financial institutions, to ensure protection from cyberattacks.

This course is designed for officials from state administration and governmental agencies involved in establishing, developing, coordinating, and implementing a national cybersecurity strategy and other relevant projects. It is also of interest to anyone influencing cybersecurity initiatives at the national level. This training course aims to deliver insights regarding the best cybersecurity governance practices at the national level, including methods, practical examples, and lessons learned.



# Governing cybersecurity



## Learning outcomes

- ✓ Initiate, lead and contribute to national cybersecurity strategy development and implementation.
- ✓ Structure mandates of stakeholders in national cybersecurity.
- ✓ Formulate a framework that provides a strategic view of an organisation's cybersecurity risk management, including management mechanisms.
- ✓ Manage cybersecurity incidents handling process in multi-stakeholder environments.
- ✓ Identify, justify and lead improvement initiatives within the national cybersecurity framework.
- ✓ Argue different alternative methods to be applied in national cybersecurity management.
- ✓ Demonstrate an understanding on the importance of national cybersecurity strategy in the entire state security context.
- ✓ Demonstrate knowledge on essential elements ensuring an effectiveness of national cybersecurity strategy.
- ✓ Put in place critical steps for improving a culture of cyber awareness in an organisation.
- ✓ Demonstrate an awareness of the leading approaches to managing cybersecurity.
- ✓ Practical interpretation of the trade-offs between security and privacy and a method for understanding organisation priorities.

# Governing cybersecurity



## Course structure

The course consists of six modules as shown below.

### Module GCS01

#### Introduction to cybersecurity strategy essentials

Overview on international cybersecurity regulations and initiatives

Essential drivers and elements for national cybersecurity strategy

Typical cyber security strategy development path –building blocks, lifecycle and supervision

### Module GCS02

#### Cybersecurity strategy models

Increasing context within national cybersecurity strategy using maturity models

Analysis of maturity evaluation — case study

Cyber strategy development and maturity evaluation

### Module GCS03

#### Cultivating a culture of cybersecurity

Building a culture of cybersecurity

Exploring ethics in cybersecurity

Roundtable on best practices and lessons learned

### Module GCS04

#### Cybersecurity at institutional and national level

National cybersecurity from different views; state secret service, military, government and its organisations, international and local businesses and citizens

Essential elements for national incident handling capabilities

Centralised and decentralised models — case study

Establishment of national cyber incident handling capabilities — lessons learnt

Best practices on quantification of incident detection at national level

Best practices overview, service models and implementation guidelines

Readiness to handle cyber incidents at national level during national elections

Handling cyber crisis at national level

Establishing requirements and communication channels between government and national cybersecurity incident response team

Geopolitical issues, international crime, internet as a platform for radicalisation and terrorism

### Module GCS05

#### Cybersecurity strategies at international level

International initiatives; ITU, GFCE, FIRST.org, ESCOTF-CSIRT, AP-CERT and related

Example of international border-less cyber investigation/analysis of official INTERPOL report

Best practices on making national cybersecurity-related legislations; general vs. sectorial approach; international vs. local standards

Success story from any organisation (Including GDPR aspects) — case study

Roundtable — “Is strong local cybersecurity industry (community) one of the best enablers to advance cybersecurity at national level?”

### Module GCS06

#### Budgeting for cybersecurity initiatives

Budgeting for national cybersecurity initiatives: investments vs return. What really works? Budget scenarios for prevention, detection and response and learn how each affects profitability

## Target audience

- ✓ Employees with two or more years working experience in the ICT industry.
- ✓ ICT Specialists in computer hardware, software and data scientists.

# ICT regulatory masterclass for executives and board members



## Introduction

Technological innovation is taking place at an unprecedented pace. Information and communication technologies (ICT) are constantly evolving, connecting devices and people, revolutionising all sectors of the economy, driving growth, changing businesses and lives. The traditional frameworks by which regulators governed the sector are proving inadequate in the light of the phenomenal changes in the sector.

To safeguard and protect consumers, ICT regulation must evolve to fulfil their role in the changing ICT landscape.

An appropriate regulatory framework and relevant skills and knowledge lie at the heart of ICT regulation but the dynamism of the sector and unrelenting technological innovation present challenges for regulators to maintain the level of technological understanding that the environment demands.

This course is designed to explain to executives and board members in the regulation space, the role of the regulator and provide an understanding of the policy and legislations that govern ICT, insight into emerging technologies such as 6G/Wi-Fi 6, their impact on the economies and how regulators can proactively fulfil their role. Furthermore, the course will help equip participants with the necessary skills to effectively participate in the deliberations at the board of the regulatory authority.

## Learning outcomes

- ✓ Understanding of the role of the regulator in the ICT landscape.
- ✓ Understanding of ICT ecosystem, policy, and regulation.
- ✓ Understanding of the emerging technologies and their impact on regulation
- ✓ Ability to create an enabling environment.
- ✓ Effectively demonstrate leadership ethics and governance at board level.
- ✓ Understanding of cyber security issues and the policy and legal requirements.
- ✓ Ability to build inclusive societies.
- ✓ Understanding of the strategies for affordable access to broadband and ICT devices.
- ✓ Ability to collaborate in a hyperconnected world.
- ✓ Understanding of the radio frequency spectrum.

## Target audience

- ✓ Executive leaders in the ICT regulatory environment.
- ✓ Board members in the ICT regulatory environment.



# ICT regulatory masterclass for executives and board members



## Course structure

There are 10 modules in the course as shown below.

### Module ICTRM01

#### The role of the regulator

- National circumstances and goals
- Consumer protection
- Market entry
- Managing common resources
- Maintaining a level playing field for fair competition
- Costing
- Fostering investment
- Enforcement

### Module ICTRM02

#### Fourth industrial revolution technology, the ICT ecosystem and the impact on regulation

- ICT — an enabler for development
- National and global infrastructure and networks
- Players and services in the ICT sector

### Module ICTRM03

#### Policy, legislation and regulation — creating an enabling environment

- Creating an enabling environment for ICT products and services
- Technology neutrality
- Competition
- Privacy and security

### Module ICTRM04

#### Collaboration in a hyper-connected world

- The hyperconnected world
- Multi-disciplinary approaches to regulation
- Key trends in the hyperconnected world
- Case study: Thriving in the hyperconnected world

### Module ICTRM05

#### Radio frequency spectrum management

- Introduction to radio frequency spectrum
- Wireless services
- Mobility and accessibility
- Case study: The uptake of the digital terrestrial television broadcasting

### Module ICTRM06

#### Meaningful, affordable universal broadband connectivity

- Building inclusive societies
- Affordable access to broadband ICT and devices
- Adoption and digital literacy and skills
- Appropriate content and applications

### Module ICTRM07

#### Cybersecurity

- Risks and threats in cyberspace
- Policy and legal requirements
- Countermeasures
- National and international collaborative processes
- Case study

### Module ICTRM08

#### Capability development

- Making use of technology to build capacity
- Blended learning formats
- Cultivating critical thinking skills
- Building awareness and educating

### Module ICTRM09

#### Insights on leadership and governance

- Effective governance (the wheel of governance)
- Standards for the board

### Module ICTRM10

#### Leadership essentials

- Power, justice and social relations
- Leadership skills, characteristics and traits
- Ethics and decision making
- Engendering trust and confidence

# Diploma in telecommunications management studies (DTMS)



## Introduction

The telecommunications sector is among the fastest growing in the world today. Driven by rapid technological innovation, and customers' insatiable requirements for efficiency and speed, the industry is constantly changing and evolving. This rapid pace presents immense business challenges for organisations involved in the sector as it is difficult to keep abreast of the developments and to understand its potential impact on its operations and products.

The Diploma in Telecommunications Management Studies (DTMS) course is designed to provide participants with the knowledge and the skills that will enhance their ability to master the changes in the business and technical environment for operational effectiveness. The course will examine the essential elements of technology evolution, emerging and immersive technologies which have disrupted and are dismantling the traditional institutional, legal and regulatory frameworks.

Participants in the DTMS course will help better understand the challenges of creating enterprise value and will be provided with tools for effective telecommunications management. The practical, hands-on approach of this DTMS course will lay a significant foundation of the telecommunications industry while it challenges participants to embrace change through its interactive and enriching sessions.

The DTMS is an internationally recognised course that is accredited by United Kingdom Telecommunications Academy (UKTA).



# Diploma in telecommunications management studies (DTMS)



## Learning outcomes

- ✓ Assimilate ICT industry knowledge and acquire skills to manage ICT organisations.
- ✓ Gain in-depth knowledge on telecommunications fundamentals.
- ✓ Understanding of cybersecurity essentials and network interconnect.
- ✓ Understanding of spectrum management, fixed wireless and networks planning.
- ✓ Gain understanding and understanding of the emerging and enabling technologies.
- ✓ Understanding of the telecommunications markets, financial management.
- ✓ Gain knowledge on managing business projects and transformation.
- ✓ Understanding of strategic management in a telecommunications environment.

## Course structure

*The course consists of 16 modules as shown below.*

### Technical modules

Telecoms Fundamentals (TF)  
 Spectrum Management (SM), Fixed and Wireless Networks Planning (FWNP)  
 Telecom Markets (TM), Next Generation Network (NGN) Services and Impact on Network Resources (INR)  
 Network Interconnect (NI)  
 Cybersecurity  
 Telecoms Policy and Regulation (TPR)  
 Emerging and Enabling Technologies (EET)  
 Risk Management and Business Continuity (RMBC)

### Business modules

Business Environment and Strategic Management (BESM)  
 Telecommunication Marketing and Sales (TMS)  
 Customer Service Management (CSM)  
 Strategic Human Resources Management (SHRM)  
 Telecommunications Financial Management (TFM)  
 Business Case and Project Management (BCPM)  
 Business Transformation and Change Management (BTCM)  
 Business Communication (BC)

## Course benefits

- ✓ Internationally recognised qualification.
- ✓ Gain credits that give access to undergraduate courses or professional courses.

## Target audience

- ✓ Anyone new to telecommunications.



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# Business management courses

# Digital transformation



## Introduction

Digital transformation is the process of changing culture through the integration of digital technologies to deliver better value for clients. An organisation's ability to successfully deploy new technologies will lead to increased efficiency, improved services and products, greater market share and greater organisation agility.

The revolution in information and communication technologies (ICT) continues to change the world, dismantling traditional frameworks that govern the way we live. The COVID-19 pandemic forced many organisations on the path of digital transformation. An increase in digital investments has been observed but ironically, digital return in the form of growth and competitive advantage remains elusive.

Digital transformation is not a destination but a multi-faceted, complex journey that requires collaboration between many diverse stakeholders. The journey begins with public awareness of and education on the potential of ICT to transform everyday activities.

The national development priorities and challenges must be carefully articulated so that appropriate technology and ICT solutions could be leveraged to enable re-imagined services.

The Digital Transformation course will assist participants with establishing an organisation-wide vision, and formulating and implementing successful digital transformation strategies that contributes to the progress of the country as a digital nation. The course is also designed to impart insights on raising awareness as well as gaining support for the design and development of an integrative and holistic approach to digital transformation. The course provides models for building competencies, capabilities and plans for business process re-engineering, change management and monitoring, measuring the impact and adjusting processes.



# Digital transformation



## Learning outcomes

- ✓ Conduct an assessment of the organisation's current transformation plans.
- ✓ Develop a roadmap for raising public awareness and educating citizens at national level.
- ✓ An understanding of management and governance principles and effective stakeholder engagement.
- ✓ Analyse the needs, gaps, pitfalls to digital transformation.
- ✓ Identify, research and select adequate technology, expertise, infrastructure, and resources.
- ✓ Identify capacity, talent and skills necessary for digital strategy execution and determine if the skills can be sourced locally or externally.
- ✓ Build capacity and upskill.
- ✓ Streamline processes and improve user experiences with digital technologies like Artificial intelligence and Internet of Things (IoT).
- ✓ Adjust or change both internal and external processes necessary for supporting digital transformation.
- ✓ Align organisation objectives and cultivate a culture that fosters innovation, creative thinking and the appropriate use of technologies.

## Target audience

- ✓ Employees responsible for leading and implementing digital transformation projects.

# Digital transformation



## Course structure

The course consists of eight modules:

### Module DT01

#### Key elements of a successful digital transformation framework

Develop bespoke framework based on vision and strategy

Develop a customised plan

Adaptability

Top buy-in and support

Build a multifunctional team

Develop communication plan

### Module DT02

#### Defining and implementing a phased digital transformation programme for transforming traditional government to digital government

Assess the external and internal environment.

Develop digital strategy and assess impact on business

Architect business solution

Establish initiatives and deploy solution

Conduct impact analysis

### Module DT03

#### Managing and executing digital transformation projects on a budget.

Stakeholder input on cost and budgeting

Leverage off the shelf solutions for cost cutting

Consider emerging technologies to boost efficiency and cut costs

### Module DT04

#### Managing change in digital transformation

Create roadmap for change

Implementing and managing change at all levels

### Module DT05

#### E-government models and it tools

##### MODELS

Model of UN

Model of Wescott

Communication tools

##### IT TOOLS

Communication tools

Document management systems

CRM tools

Business process automation tools

Knowledge management systems

Electronic signature tools

Project management tools

### Module DT06

#### Transformation tools and technologies

Mobile

Internet of Things

Robotics

Cloud

Digital twin

Augmented reality

Artificial intelligence and machine learning

Additive manufacturing

### Module DT07

#### Leading digital transformation

Cultivating a growth mindset

Influence and inspiration

Ability to navigate innovation and change

Multifunction team collaboration

### Module DT08

#### Templates for digital transformation

Use cases

Tried and tested frameworks and templates

# Leading for impact masterclass for ICT managers and regulators



## Introduction

The relentless pace of innovation in Information and Communication Technologies (ICT) is disrupting traditional regulatory frameworks and business models. In this dynamic landscape, regulators must creatively balance consumer protection, fair market conditions, and investment encouragement without hindering innovation. This necessitates robust leadership skills.

Every appointed manager brings a unique set of technical skills, knowledge, and expertise to the table, qualifying them to strategise, plan, and execute functions that propel their organisation's strategic goals forward.

As leaders, managers are tasked with inspiring and influencing their teams to reach their full potential. They are responsible for cultivating an environment that empowers team members to excel while aligning with organisational objectives.

Our *Leading for impact masterclass* is a comprehensive programme, customised and contextualised for middle and senior management in the regulatory environment.

It aims to help participants navigate the ICT regulatory landscape and understand the balancing act regulators play between consumer needs and political directives. The course provides insights into the industry's ecosystem, political mindset, and prepares participants to thrive in the ever-evolving technological and economic landscape.

Designed to unlock participants' personal power, the course enhances self-awareness, resilience, and confidence in an uncertain environment. It helps participants understand team dynamics and equips them with tools to manage diverse personality traits effectively.

The course adopts a practical, hands-on, interactive approach that challenges, broadens, and enriches participants' perspectives. It includes pre and post-programme coaching sessions for a holistic learning experience.

If you're a regulator who aspires to be a successful leader or seeks to enhance your leadership skills, this course is tailor-made for you!

## Learning outcomes

- ✓ A full understanding of their role and responsibility as regulatory managers.
- ✓ A better understanding of themselves and how they lead and manage.
- ✓ Tools for understanding how to better communicate within the political and operator arenas.
- ✓ Better understand the key elements of regulatory organisational effectiveness.
- ✓ The key skills required to be effective within a regulatory agency.
- ✓ The differences between management and Leadership and the skills required for each.
- ✓ The ability to better mentor and coach their teams.
- ✓ What is required of regulator leaders in the changing technology and economic landscape.





# Leading for impact masterclass for ICT managers and regulators

## Course modules for middle managers

The course consists of three modules:

### Pre-programme

#### Leadership audit assessment

Onboarding/induction  
360 feedback audit session

DISC behavioural assessment  
Pre-programme coaching session

### Module LIM01

#### Management foundations

The mindset of a regulatory manager  
Management and the regulatory organisation  
Emotional intelligence — DISC assessment

Effective communication  
Leadership and management  
Building high-performing teams  
Personal development plan  
Case study

### Module LIM02

#### Regulatory management

The ICT regulators landscape  
Regulatory manager's functions and roles  
Building competency

Managing political and government stakeholders  
Managing ICT operators  
Managing public and customer/consumer perceptions

### Module LIM03

#### Leadership essentials

Leading regulatory functions  
Maintaining ethical leadership standards  
Coaching and mentoring  
7 Cs of leadership  
Leading by influence in a hyperconnected world  
Managing change effectively  
The next 180 days  
Case study

### Post-Programme

#### Coaching and assessment

Three 1-2-1 coaching sessions  
90 minutes online follow up coaching sessions a month  
360 leadership audit assessment  
One-on-one joint feedback sessions

## Course benefits

- ✓ Customised and tailor made for ICT management teams.
- ✓ Pre- and post-programme coaching and assessment.
- ✓ Access to online video series for each module.

## Target audience

- ✓ First-line and middle management.
- ✓ Senior and executive management.

# Leading for impact masterclass for ICT managers and regulators



## Course modules for senior/executive managers

*The course consists of three modules:*

### Pre-programme

#### Leadership audit assessment

Onboarding/induction

Pre-workshop reading and exercises—book summaries and mini courses

360 feedback audit session

DISC behavioural assessment

Pre-programme coaching session

### Module LIME01

#### Leadership foundations

The executive leadership mindset

End game and path to a desired future exercise

The art, science and practice of leading with emotional intelligence

Me, my style, my impact

### Module LIME02

#### Practising leadership

The five practices of exemplary leadership

Improving your leadership communication delivery

Build executive presence

My executive development plan

### Module LIME03

#### Leadership essentials

Maintaining ethical leadership standards

Managing political and government stakeholders

Leading organisational change effectively

Building high-performing teams

Mentoring and coaching—a tool for capacity building and improved effectiveness

### Post-Programme

#### Coaching and assessment

Three 1-to-1 coaching for each executive leader

## Course benefits

- ✓ Customised and tailor made for the regulatory management teams.
- ✓ Pre- and post-programme coaching and assessment.
- ✓ Access to online video series for each module.

## Target audience

- ✓ First-line and middle management.
- ✓ Senior and executive management.



COMMONWEALTH  
TELECOMMUNICATIONS  
ORGANISATION

# Enrolment and registration





## How to enrol

To enrol for the courses, contact the CTO:

Email: [info@cto.int](mailto:info@cto.int)

Telephone: +44 (0)20 8600 3800

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