

# CIN - NETWORKING (CIN)

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## **CIN 2003 Enterprise Network Services (2-2-3)**

Explore concepts and technologies behind domain based enterprise networks. Install, configure and administer an enterprise network operating system and configure protocols, services and server functions such as storage, backup and disaster recovery to the level required to effectively administer a secured domain based enterprise networks.

**Prerequisites:** CIS 1103 or (CID 1012, CID 1022)

## **CIN 2103 Networking Fundamentals (2-2-3)**

Exploring the OSI and TCP/IP layered models is fundamental to understanding how computing devices communicate with each other. Analyse the role the various protocols play in relation to physical and logical addressing, network types, end-to-end connectivity and application requirements and develop abilities to assess key factors in designing and building effective computer networks.

**Prerequisites:** CIS 1103 or (CID 1012, CID 1022)

## **CIN 2203 Routing Protocols (2-2-3)**

Understanding of how routers learn about remote networks and find the best path for data packets to reach a final destination is essential to becoming a competent networking professional. Select and configure routing protocols and implement enterprise solutions such as Access Control Lists (ACLs) and Network Address Translation (NAT) to create secure network connectivity within organisations and to the public Internet.

**Prerequisites:** CIN 2103

## **CIN 3003 LAN Switching (2-2-3)**

Discuss the features of a layer 2 and layer 3 switching, and learn how a switch interconnects and communicates with other switches and routers in networks. Build efficient, secure and reliable switched networks of varying size in response to business needs and apply effective troubleshooting techniques to ensure reliable communication between all devices on the network.

**Prerequisites:** CIN 2103

## **CIN 3103 Wireless Networks (2-2-3)**

Learn the fundamentals of wireless communication including terminologies and behaviours associated with radio frequencies, components, standards and relevant organisations. Work in teams to perform case analysis, site surveys and measurement techniques to plan, design and implement secure wireless networks and evaluate their performance

**Prerequisites:** CIS 1103

## **CIN 3203 WAN Technologies (2-2-3)**

This course explores how Wide Area Network technologies such as PPP, Frame relay and Broadband technologies are used to connect networks over great distances and allow remote business branches to communicate securely. It also evaluate critically case based scenarios and select appropriate procedures and technologies to design, build and troubleshoot enterprise network solutions in response to complex business needs spanning multiple locations

**Prerequisites:** CIN 2203

## **CIN 3303 Network Security (2-2-3)**

Investigate the principles of network security including threat identification, risk analysis, risk management and risk avoidance.

Configure network devices including routers and firewalls to prevent network attacks and to protect vital business assets. Analyse risk and assess vulnerabilities based on case scenarios and develop and implement policies, procedures and technologies to avoid potential threats, balancing business and security needs.

**Prerequisites:** CIN 2103

## **CIN 3503 Virtualisation Technologies (2-2-3)**

Identify the key concepts of virtualising a classic data centre. Build a virtual infrastructure and manage resources in the virtual environment. Implement disaster recovery solutions to provide Business Continuity (BC) and Disaster Recovery (DR) for the virtual environment. Secure the virtual environment using industry best practices and maintain security for the virtual environment.

**Prerequisites:** CIS 1103 or (CID 1012, CID 1022)

## **CIN 4003 Routing Solutions for the Enterprise (2-2-3)**

Develop a critical understanding of design, configuration and implementation of exterior gateway protocols, remote connectivity and path control in enterprise networks. Explore route redistribution, path control branch and mobile connectivity. Apply the needed skills to design, implement and configure multiple routing protocols in a large network.

**Prerequisites:** CIN 2203

## **CIN 4006 Advanced Routing (4-4-6)**

Configure and implement enterprise-wide converged networks using interior and exterior gateway protocols such as EIGRP, OSPF and BGP. Analyse resource requirements and create implementation and verification plans for both interior and exterior gateway routing protocols using advanced features of IPv6. Determine and implement routing requirements for branch offices and mobile workers.

**Prerequisites:** CIN 2203

## **CIN 4103 Network Management (2-2-3)**

Examine the fundamental concepts of network management, network management protocols, network management tools and implementation. Analyse and troubleshoot networks and examine various standards used for network management. Apply industry standards into practice and build a robust network operation and management plan for businesses.

**Prerequisites:** CIN 2203, CIN 3003

## **CIN 4106 Advanced Switching (4-4-6)**

The course teaches the students how to design, build, document and secure advanced campus networks and implement services such as IP telephony, QoS (traffic shaping and traffic engineering) and wireless LAN integration. Students will configure and implement multilayer switching solutions using protocols such as HSRP, VRRP/GLBP, VLANs, multicasting, VTP & advanced STP and monitor network performance to ensure high levels of security and availability in line with organisational requirements.

**Prerequisites:** CIN 2103

## **CIN 4113 Scalable Computer Network (2-2-3)**

Managing a scalable and highly available enterprise network.

Understanding the role of link aggregation and first hop redundancy protocols to ensure that the enterprise has high speed switched network. Implementing network Layers Redundancy and availability in a switched network. Optimising and troubleshooting interior routing protocols.

**Prerequisites:** CIN 2203, CIN 3003

**CIN 4203 Voice over Internet Protocol (VoIP) Fundamentals (2-2-3)**

Focus on the VoIP network design, planning and implementation.

Investigate the operation and troubleshooting of networks with integrated services for voice over IP (VoIP). Examine the role of Quality of Service (QoS), coding of voice and call setup in IP telephony networks.

**Prerequisites:** CIN 2103