

HIGHER NITEC IN TECHNOLOGY – Cyber & Network Security

Course Code: HT2CN / Plan Code: HT2CN

COURSE OBJECTIVE

This course equips students with skills and knowledge to support end-user devices, network and server in an enterprise IT / cloud environment for cyber security services and operations so as to enhance cybersecurity defence against cyber-attacks. They will also learn to analyse security-related events and escalate them for validation and remediation.

COURSE STRUCTURE

Core/Specialisation Modules

S/N	Module Details	Module Code	Module Objectives
MSC: Enterprise Network Technology			
C1	Networking Technology 25 (T) 35 (P) Credits 3 Prerequisite: Nil	SN43002FP	On completion of the module, students should be able to apply the fundamentals of computer networking in relation to the OSI model. They should also be able to configure and set up wired and wireless local area network (LAN) including network segmentation. Students will also be able to perform network documentation and monitor network performance.
		Equivalent Code IT4045FP	
C2	Enterprise Networking 25 (T) 35 (P) Credits 3 <i>Advisory: Network Technology module or equivalence</i>	SN43003FP	On completion of the module, students should be able to configure and set up a switched and routed network with Virtual LANs (VLANs) as well as set up a wide area network (WAN), implement access control lists and troubleshoot common network issues and problems.
		Equivalent Code IT4045FP	
MSC: Infrastructure Administration			
C3	System Administration 24 (T) 36 (P) Credits 3 Prerequisite: Nil	SN43004FP	On completion of the module, students should be able to set up server operating systems and perform system administration tasks such as user management, resource management and performance monitoring. Students should also be able to configure file server services and implement basic system security.
		Equivalent Code IT4043FP	
C4	System Hardening & Infrastructure Services 24 (T) 36 (P) Credits 3 Prerequisite: Nil	SN43005FP	On completion of the module, students should be able to perform server security hardening and manage infrastructure services. Students should also be able to automate server administration and implement high-availability systems.
		Equivalent Code IT4043FP	
MSC: Virtualisation & Cloud Administration			
C5	Virtualisation Fundamentals 20 (T) 40 (P) Credits 3 Prerequisite: Nil	SN43006FP	On completion of the module, students should be able to set up virtualisation server and environment. They should also be able to perform backup and recovery of VMs for fault tolerance. They should be able to perform basic troubleshooting with hypervisor and VMs.
		Equivalent Code IT4044FP	
C6	Cloud System Administration 18 (T) 42 (P) Credits 3	SN43007FP	On completion of the module, students should be able to administer cloud / virtualisation platform and its associated services, monitor resource utilisation on the hypervisor,
		Equivalent Code IT4044FP	

	<i>Advisory: Virtualisation Fundamentals module or equivalence</i>		troubleshoot performance and connectivity issues as well as secure the cloud / virtualised infrastructure. They will also be introduced to commercially available cloud services, including containers and be able to utilise them.
MSC Security Operations & Testing			
C7	Security Operations 20 (T) 40 (P) Credits 3 Prerequisite: Nil	CN53003FP	On completion of the module, students should be able to take up tasks in the Security Operations Centre (SOC) environment including monitoring and identifying security risks, analysing and classifying security risks through security monitoring systems. They should also be able to apply appropriate counter measures to mitigate identified threats.
		Equivalent Code IT5046FP	
C8	Security Vulnerability Testing 20 (T) 40 (P) Credits 3 Prerequisite: Nil	CN53004FP	On completion of the module, students should be able to perform system and network scanning, vulnerability assessment and documentation of identified vulnerabilities. They should also be able to perform basic penetration testing and prepare appropriate test documentation.
		Equivalent Code IT5046FP	
MSC: IT & Infrastructure Security			
C9	IT Security 20 (T) 40 (P) Credits 3 Prerequisite: Nil	CN53002FP	On completion of the module, students should be able to perform network intrusion detection, prevention and mitigation through the implementation of intrusion detection system. They should also be able to implement a secure network using Public Key Infrastructure technologies and set up a secure wireless network, as well as perform privilege identity management support functions.
		Equivalent Code IT5045FP	
C10	Infrastructure Security 20 (T) 40 (P) Credits 3 Prerequisite: Nil	CN53001FP	On completion of the module, students should be able to configure firewall appliances, intrusion detection and prevention systems, firewall policies and set up Virtual Private Networks. They should also be able to implement appropriate technologies to protect against security attacks such as spams, spyware and worms/viruses including the set-up of end-point security measures.
		Equivalent Code IT5045FP	

Abbreviations: T - Theory, P - Practical, MSC - Modular Skills Certificate

CREDITS FOR CERTIFICATION

Total of 30 credits from successful completion of 10 Core/Specialisation modules.

Applicants who do not meet the entry requirements for Core/Specialisation modules will need to complete 12 credits from 4 Foundation modules before taking Core/Specialisation modules.

Foundation Modules

S/N	Module Details	Module Code	Module Objectives
F1	Networking	SN33001FP	On completion of the module, students should

	Fundamentals 21 (T) 39 (P) Credits 3 Prerequisite: Nil	Equivalent Code Nil	be able to set up, configure, set up and troubleshoot wired and wireless network system for small office environment. They should be able to provide network support and configure devices such as switches and wireless access points.
F2	Operating System Essentials 30 (T) 30 (P) Credits 3 Prerequisite: Nil	SN33002FP Equivalent Code Nil	On completion of the module, students should be able to install and configure operating system (OS) and application software on end user computing devices. In addition, they should also be able to perform OS maintenance and troubleshooting.
F3	Fundamentals of Data 10 (T) 50 (P) Credits 3 Prerequisite: Nil	DE33001FP Equivalent Code Nil	On completion of the module, students should be able to import data from external sources, perform basic data manipulation and present simple visualisation of the data.
F4	Cybersecurity Fundamentals 30 (T) 30 (P) Credits 3 Prerequisite: Nil	SN33003FP Equivalent Code Nil	On completion of the module, students should be able to apply the knowledge and essentials skills in all security domains in the cyber world - information security, systems security, network security, mobile security, physical security, ethics and laws, related technologies, defence and mitigation techniques use in protecting.

Abbreviations: T - Theory, P - Practical

VENUE

ITE College Central, ITE College East, ITE College West

Note:

- 1) The training schedule of lessons is subject to change.
- 2) Depending on the demand, not all the modules in the CET *Higher Nitec* in Technology courses will be offered in each intake. Where the modules are offered and there is insufficient enrolment, the classes will be cancelled and a full refund will be given to the affected students.