

## HIGHER NITEC IN TECHNOLOGY – IT SYSTEMS & NETWORKS

Course Code: HT2IS / Plan Code: HT2IS

### COURSE OBJECTIVE

This course equips students with skills and knowledge to set up, maintain and troubleshoot end-user computing devices, network, server and application in a hybrid infrastructure environment. They will also learn to secure wireless LAN and network as well as support of IT project development to ensure smooth operations of Infocomm hardware and software in the organisation.

### COURSE STRUCTURE

#### Core/Specialisation Modules

S/N	Module Details	Module Code	Module Objectives
<b>MSC: Enterprise Network Technology</b>			
C1	<b>Networking Technology</b> 25 (T) 35 (P) Credits 3 Prerequisite: Nil	<b>SN43002FP</b>	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 IT4042FP	
C2	<b>Enterprise Networking</b> 25 (T) 35 (P) Credits 3 <i>Advisory: Network Technology module or equivalence</i>	<b>SN43003FP</b>	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 IT5040FP	
<b>MSC: Infrastructure Administration</b>			
C3	<b>System Administration</b> 24 (T) 36 (P) Credits 3 Prerequisite: Nil	<b>SN43004FP</b>	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	<b>System Hardening &amp; Infrastructure Services</b> 24 (T) 36 (P) Credits 3 Prerequisite: Nil	<b>SN43005FP</b>	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	
<b>MSC: Virtualisation &amp; Cloud Administration</b>			
C5	<b>Virtualisation Fundamentals</b> 20 (T) 40 (P) Credits 3 Prerequisite: Nil	<b>SN43006FP</b>	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	<b>Cloud System Administration</b> 18 (T) 42 (P)	<b>SN43007FP</b>	On completion of the module, students should be able to administer cloud / virtualisation platform and its associated services, monitor
		Equivalent Code IT4044FP	

	Credits 3 <i>Advisory: Virtualisation Fundamentals module or equivalence</i>		resource utilisation on the hypervisor, 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.
<b>MSC: System Scripting</b>			
C7	<b>Scripting Essentials</b> 21 (T) 39 (P) Credits 3 Prerequisite: Nil	<b>SN53001FP</b> Equivalent Code IT5038FP	On completion of the module, students should be able to apply basic structured thinking skill to develop script to perform basic system related tasks and activities.
C8	<b>Administrative Scripting</b> 21 (T) 39 (P) Credits 3 <i>Advisory: Scripting Essentials or any equivalent basic python programming knowledge</i>	<b>SN53002FP</b> Equivalent Code IT5038FP	On completion of the module, students should be able to provide programming support to IT system automation and other related project.
<b>MSC: Wireless &amp; Network Security</b>			
C9	<b>Wireless Networking Fundamentals</b> 21 (T) 39 (P) Credits 3 Prerequisite: Nil	<b>SN53003FP</b> Equivalent Code IT5039FP	On completion of the module, students should be able to install, configure and secure Wireless Local Area Networks (WLANs). They should also be able to perform monitoring of WLAN.
C10	<b>Infrastructure Security</b> 20 (T) 40 (P) Credits 3 Prerequisite: Nil	<b>CN53001FP</b> Equivalent Code IT5039FP	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.

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

### CREDITS FOR CERTIFICATION

Total of 30 credits from successful completion of 8 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	<b>Networking Fundamentals</b> 21 (T) 39 (P) Credits 3 Prerequisite: Nil	<b>SN33001FP</b> Equivalent Code Nil	On completion of the module, students should 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	<b>Operating System Essentials</b> 30 (T) 30 (P) Credits 3 Prerequisite: Nil	<b>SN33002FP</b>	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.
		Equivalent Code Nil	
F3	<b>Fundamentals of Data</b> 10 (T) 50 (P) Credits 3 Prerequisite: Nil	DE33001FP	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.
		Equivalent Code Nil	
F4	<b>Cybersecurity Fundamentals</b> 30 (T) 30 (P) Credits 3 Prerequisite: Nil	<b>SN33003FP</b>	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.
		Equivalent Code Nil	

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.