

# HIGHER NITEC IN IT SYSTEMS & NETWORKS (2 YEARS)

## Core Modules

### Networking Fundamentals

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.

### System Software Essentials

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.

### Computer Maintenance

On completion of the module, students should be able to perform installation and configuration of hardware components and peripherals of end user computing devices. In addition, they should also be able to perform end user computing devices maintenance and troubleshooting of hardware problems.

### Networking Technology

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.

### Enterprise Networking

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.

### System Administration

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.

### System Hardening & Infrastructure Services

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.

### Virtualisation Fundamentals

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.

### Cloud System Administration

On completion of the module, students should be able to administer cloud / virtualisation platform and its associated services, monitor 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.

## Specialisation Modules

### Scripting Essentials

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.

### Administrative Scripting

On completion of the module, students should be able to provide programming support to IT system automation and other related project.

### Wireless Networking Fundamentals

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.

### Infrastructure Security

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.

### Industry Attachment

On completion of the modules, students should be able to integrate and apply a cluster of key technical, social and methodological competencies related to their field of study.