



## Level 4 Certificate in Networking (107) 139 Credits






<b>Subject Title:</b> Windows Server Administration & Implementation	<b>Guided Learning Hours:</b> 220
<b>Exam Paper No.:</b> 3	<b>Number of Credits:</b> 22
<b>Prerequisites:</b> Knowledge of Windows operating system.	<b>Corequisites:</b> A Pass or better in Diploma in Information Technology or equivalence.
<b>Aim:</b> Understanding the configuration of security in Windows Network through planning and configuration of authentication and authorisation strategy; setting up Certificate Authority (CA), configuration and distribution of Certificates; using Smart Cards; planning and setting Encrypting File System; server roles; workstation's security level; ISA Server and securing Remote Access. Instructions focus on the installation, configuration and management of local area networked servers. Topics covered include support for local area networked devices, system services, and deployment of networked operating systems. The unit covers tutorial in various network protocols, name resolution services, remote access, security, print installation, configuration, administration, monitoring, and troubleshooting of Server Administration software in an Active Directory domain environment. The unit provides extensive tutorial for the technical knowledge required for installation, configuration, administration, monitoring, and troubleshooting of Network Infrastructure services such as NDS, DHCP, WINS, RRAS, NAT .The unit teaches all skill sets related to Microsoft Windows Server including deployment, management, maintaining and monitoring of the server, and maintaining high availability of the servers in a network; how to design and plan network and application services including physical topologies and domains and forests.	
<b>Required Materials:</b> Recommended Learning Resources.	<b>Supplementary Materials:</b> Lecture notes and tutor extra reading recommendations.
<b>Special Requirements:</b> The unit requires a combination of lectures, demonstrations, discussions, and hands-on labs.	
<b>Intended Learning Outcomes:</b> 1 The basic concepts of Windows Server Active and basic feature support for Windows Server, Standard Edition.  2 The installation and configuration of Windows Server and hardware devices.	<b>Assessment Criteria:</b> 1.1 Analyse the main products within the Windows Server family 1.2 Examine the features of Windows Server 1.3 Describe the Windows Server operating system architecture 1.4 Contrast workgroups vs domains 1.5 Explain Windows Server network services 1.6 Describe the Windows Server network protocols 1.7 Explain the Windows Server network security services 1.8 Explain Windows Server network models and server roles 1.9 Explain Windows Server Active Directory concepts 1.10 Describe the various tasks of a Windows Server Network Administrator  2.1 Identify the phases of the installation process 2.2 Analyse and differentiate different methods of network installation and upgrade 2.3 Describe how to troubleshoot failed installations 2.4 Demonstrate using the Device Manager

	<p>tool</p> <p>2.5 Analyse hardware profiles and event logs</p> <p>2.6 Describe how to configure hardware resource settings and resolve resource settings conflicts</p> <p>2.7 Demonstrate how to install and manage Windows Server updates</p> <p>2.8 Analyse the various methods, tools and processes used to manage Windows Server</p>
<p>3 Understand the default Active Directory features on domain controller running Windows Server.</p>	<p>3.1 Describe the underlying Active Directory concepts</p> <p>3.2 Describe the basic elements of Active Directory</p> <p>3.3 Demonstrate how to install Active Directory</p> <p>3.4 Demonstrate how to work with Microsoft Management Console and Snap-ins</p> <p>3.5 Demonstrate how to create organisational units and manage Active Directory objects</p> <p>3.6 Describe the role of Active Directory database and shared system volume</p> <p>3.7 Describe how to troubleshoot Active Directory group types and scopes</p> <p>3.8 Demonstrate how to administer Active Directory object permissions</p> <p>3.9 Describe how to manage and troubleshoot Active Directory replication</p>
<p>4 The organisational structure of data storage disks; overview of Physical Storage Media and classification of Physical Storage Media.</p>	<p>4.1 Identify the different storage types</p> <p>4.2 Demonstrate creating primary and extended partitions</p> <p>4.3 Contrast basic disks vs dynamic disks</p> <p>4.4 Demonstrate how to implement simple, spanned, striped, mirrored and RAID-5 volumes</p> <p>4.5 Describe how to defragment volumes and partitions</p> <p>4.6 Analyse disk failure recovery process</p> <p>4.7 Describe disk management concepts, purpose and implementation of mounted drives.</p>
<p>5 File systems, file permissions; distributed file system and setting file permissions for shares in DFS replica sets to apply to all replicas.</p>	<p>5.1 Analyse the different file systems</p> <p>5.2 Describe how to compress and encrypt data</p> <p>5.3 Describe how to assign, create and manage shared folder permissions</p> <p>5.4 Compare and contrast NTFS vs Special Access permissions</p> <p>5.5 Analyse Distributed file system components and be able to manage Dfs Root</p> <p>5.6 Describe how to troubleshoot permissions</p> <p>5.7 Demonstrate how to configure file and</p>

<p>6 User Administration and User Accounts; the administration of user accounts; how Administrators can configure users and the kinds of user account.</p>	<p>folder attributes</p> <p>5.8 Demonstrate how to implement and manage disk quotas</p> <p>6.1 Explain the purpose of local user accounts</p> <p>6.2 Describe how to create, set and modify local user accounts</p> <p>6.3 Demonstrate the automation of user creation and modification</p> <p>6.4 Summarise user profiles and be able to configure local, roaming and mandatory user profiles</p> <p>6.5 Demonstrate the user authentication process</p> <p>6.6 Demonstrate how to troubleshoot user account and authentication problems</p>
<p>7 User and Group Accounts; understanding how to create a group of user accounts with the same security rights.</p>	<p>7.1 Explain the different types of Group Accounts</p> <p>7.2 Demonstrate how to create and modify groups using Active Directory Users and Computers MMC snap-in</p> <p>7.3 Analyse built-in groups and their purpose</p> <p>7.4 Demonstrate how to create Group Policy Objects (GPOs)</p> <p>7.5 Analyse and differentiate Group Policy types</p> <p>7.6 Demonstrate how to modify software settings using GPOs</p> <p>7.7 Demonstrate how to redirect folders using GPOs</p> <p>7.8 Demonstrate how to troubleshoot computer accounts</p>
<p>8 Windows Server network printing terminology and environment; Windows printing concepts; Windows environment, printing from local computer or printing to a network printer.</p>	<p>8.1 Describe Microsoft's printing terminology</p> <p>8.2 Describe how to install and share printer resources</p> <p>8.3 Demonstrate creating printer pool and controlling access to printers</p> <p>8.4 Demonstrate how to set printer priorities</p> <p>8.5 Demonstrate how to publish printers in Active Directory</p> <p>8.6 Demonstrate how to analyse and monitor printer performance</p> <p>8.7 Demonstrate how to troubleshoot printer problems</p>
<p>9 TCP/IP, DHCP and DNS network concepts; basic computing and networking concepts; unique IPv4/IPv6 address configurations to DHCP client computers; the Domain Name System (DNS) and its use for private intranets and the Internet.</p>	<p>9.1 Explain communication in Windows Server network</p> <p>9.2 Describe network protocol framework</p> <p>9.3 Identify TCP/IP concepts</p> <p>9.4 Demonstrate how to configure and examine IP addressing in TCP/IP</p> <p>9.5 Describe the functions of DNS and DHCP servers</p> <p>9.6 Configure and administer DNS and DHCP servers</p>

<p>10 Software deployment using Group Policy; how to deploy a MSI package through GPO; assign software using per-user or per-machine.</p> <p>11 The importance of monitoring server performance; different types of performance data over a period of time; how to further modify counter logs and creating reports.</p>	<p>9.7 Troubleshoot TCP/IP, DHCP and DNS problems</p> <p>9.8 Contrast Windows, Unix and Linux operating systems</p> <p>9.9 Demonstrate how to administer web resources</p> <p>9.10 Demonstrate how to configure and troubleshoot VPN, NAT, Internet Connection Sharing and Terminal Services</p> <p>10.1 Explain IntelliMirror components</p> <p>10.2 Analyse the phases of software management</p> <p>10.3 Demonstrate how to create and configure Windows Installer packages</p> <p>10.4 Demonstrate how to deploy software through Software Installation MMC snap-in</p> <p>11.1 Demonstrate how to use Task Manager to monitor server performance</p> <p>11.2 Demonstrate how to use Event Viewer to identify and troubleshoot problems</p> <p>11.3 Demonstrate how to use Performance console to monitor server performance</p> <p>11.4 Demonstrate how to troubleshoot Windows Server startup problems</p> <p>11.5 Demonstrate how to use Windows Server Backup utility</p> <p>11.6 Analyse Windows Server security features</p>
<p><b>Methods of Evaluation:</b> A 2-hour written examination paper with Section A and Section B. Section A has 40 multiple choice questions. Section B has three essay questions, each carrying 20 marks. Candidates are required to answer all questions. Candidates also undertake project/coursework in Windows Server Administration &amp; Implementation with a weighting of 100%.</p>	

**Recommended Learning Resources:  
Windows Server 2003 Administration & Implementation**

<p><b>Text Books</b></p>	<ul style="list-style-type: none"> <li>• Microsoft Windows Networking Essentials by Darril Gibson. ISBN-13 : 978-1118016855</li> <li>• Networking Fundamentals by Gordon Davies. ISBN-13 : 978-1838643508</li> <li>• Mastering Windows Server by Jordan Krause. ISBN-13 : 978-1789804539</li> </ul>
<p><b>Study Manuals</b></p> 	<p>BCE produced study packs</p>
<p><b>CD ROM</b></p> 	<p>Power-point slides</p>
<p><b>Software</b></p> 	<p>Latest Windows Server</p>