LONDON CAPITAL COMPUTER COLLEGE

Diploma in Windows Networking (200) – Windows 2003 Server Network Infrastructure

Prerequisites: Knowledge in Windows operations system.	**Corequisites:** A pass or higher in Certificate in Networking or equivalence.
Aim: Understanding and configuration of Windows Network Environment using TCP/IP, Working in IP subnet environment, setting up client machine's IP addresses, setting up client machine's Domain Name Service, setting up DHCP service, DNS services, IPSec and Certificates, VPN, RAS, WLAN connections and system monitor. The course provides practical instructions in networking media, physical and logical topologies, common networking standards and popular networking protocols; emphasizing on the TCP/IP protocol suite and related IP addressing schemes, CIDR; including selected topics in network implementation, support and LAN/WAN connectivity. The course provides tutorial on how to implement, manage, and maintain servers within a communications infrastructure. Other topics covered include support for Terminal Services, Remote Access, Group Policy, NAT, IPSec, and specific security configurations. This course takes an in-depth look at the TCP/IP protocol and covers IP addressing and configuration, name resolution, configuring network access, configuring file and print services and general infrastructure skills. The course is designed to provide learners with the opportunity to develop the knowledge and skills required to configure, manage and troubleshoot a Microsoft Windows 2008 network infrastructure.	
Required Materials: Recommended Learning Outcomes.	**Supplementary Materials:** Lecture notes and tutor extra reading recommendations.
Special Requirements: The course requires a combination of lectures, demonstrations, discussions, and hands-on labs.	

Intended Learning Outcomes:	**Assessment Criteria:**
1. Understand a network and outline its usage	1.1 Analyse Windows Server 2003 features 1.2 Explore Windows Server 2003 editions 1.3 Identify the different types of networks including common network protocols 1.4 Outline the OSI model and its implementation in network transmission 1.5 Illustrate Windows Server 2003 networking architecture 1.6 Describe Windows Server 2003 networking services
2. Understand IP addressing structure and network protocol configuration	2.1 Outline TCP/IP overview and addressing fundamentals 2.2 Analyse and be able to configure TCP/IP parameters 2.3 Illustrate the process of subnetting a TCP/IP network 2.4 Summarise the networking binding process 2.5 Be able to use Automatic Private IP Addressing (APIPA) 2.6 Be able to test TCP/IP configuration and troubleshoot TCP/IP addressing
3. Understand the overall TCP/IP architecture	3.1 Analyse differences between TCP/IP and OSI models 3.2 Identify TCP/IP application layer protocols 3.3 Identify differences between TCP and UDP transport protocols

	3.4	Outline the different internet layer protocols and their roles
	3.5	Describe the different network layer interface protocols
4. Understand DHCP implementation in Windows Server 2003	4.1	Outline the benefits of using DHCP
	4.2	Illustrate the DHCP lease and renewal process
	4.3	Be able to install and authorise DHCP service
	4.4	Be able to configure DHCP scopes and options
	4.5	Illustrate the functions of DHCP relay
	4.6	Be able to install and configure a DHCP relay
	4.7	Be able to manage a DHCP server
	4.8	Be able to monitor and troubleshoot DHCP server service problems
	4.9	Be able to backup and restore DHCP databases
5. Understand the Name Resolution principles	5.1	Outline the different name types
	5.2	Be able to configure NetBIOS names
	5.3	Illustrate the host name resolution process
	5.4	Identify the different methods used to resolve NetBIOS names
	5.5	Be able to configure LMHOSTS file
	5.6	Be able to troubleshoot name resolution
6. Understand the functions and configuration of Domain Name System (DNS)	6.1	Identify the function and types of DNS zones
	6.2	Be able to install DNS
	6.3	Be able to configure DNS zones and zone replication
	6.4	Be able to configure caching only server
	6.5	Explore DNS and Active Directory integration
	6.6	Be able to configure and manage a DNS server
	6.7	Be able to troubleshoot DNS service
7. Configure WINS server and linkup with DNS service to perform WINS lookups	7.1	Be able to install WINS server and configure WINS replication
	7.2	Be able to configure WINS, clients and register WINS clients with static mapping
	7.3	Be able to administer, monitor and replicate WINS database
	7.4	Outline the functions of WNS proxy
	7.5	Be able to troubleshoot WINS configuration problems
8. Understand the Public Key Infrastructure (PKI) overview and how IPSec secures network traffic	8.1	Outline IP security issues and how IPSec protocol addresses them
	8.2	Analyse the different types of encryption
	8.3	Be able to implement IPSec authentication
	8.4	Be able to enable and create IPSec policies
	8.5	Analyse IPSec filter lists and filter actions
	8.6	Be able to monitor and troubleshoot IPSec communication sessions

	8.7	Describe the PKI terms and concepts
	8.8	Be able to implement a Standalone Certificate Authority (CA)
	8.9	Illustrate Web Enrolment services
	8.10	Be able to implement an Enterprise Certificate Authority
	8.11	Be able to use Certificate Request Wizard for Certificate enrolment
	8.12	Be able to view, renew and revoke Certificates
	8.13	Describe encryption file system
9. Understand purpose, features and capabilities of Windows Server 2003 Remote Access	9.1	Outline Windows Server 2003 Remote Access features
	9.2	Be able to configure Routing and Remote Access Service (RRAS)
	9.3	Be able to configure Remote Access Server
	9.4	Illustrate the process of allowing remote clients to access network resources
	9.5	Be able to create and configure remote access policies
	9.6	Identify remote access security risks
	9.7	Be able to setup and configure NAT
	9.8	Be able to troubleshoot remote access
10. Understand the functions, purpose and features of RADIUS protocols	10.1	Describe Internet Authentication Service (IAS)
	10.2	Outline the functions of RADIUS server, clients and proxies
	10.3	Be able to configure RADIUS server, RADIUS client and RADIUS proxy
	10.4	Outline User Account Dial-in properties
	10.5	Be able to monitor and troubleshoot RADIUS
11. Understand the configuration of Windows Server 2003 as a router	11.1	Be able to configure RRAS as a router
	11.2	Be able to interpret and manage routing tables
	11.3	Outline the functions of dynamic routing
	11.4	Be able to configure dynamic and static routing on Windows Server 2003
	11.5	Be able to control traffic using packet filtering
	11.6	Be able to install and configure demand-dial routing
	11.7	Be able to troubleshoot routing problems
12. Understand the different predefined security templates on Windows Server 2003	12.1	Identify the components of the Security Configuration Manager tools.
	12.2	Be able to apply security templates to a local computer and GPO.
	12.3	Be able to create security templates and modify their settings.
	12.4	Be able to use secedit.exe command and the Security Configuration and Analysis snap-in.
13. Understand network troubleshooting methodology	13.1	Outline the network maintenance cycle
	13.2	Illustrate the troubleshooting methodology.
	13.3	Identify tools used to troubleshoot server and network problems.

	13.4	Illustrate the network connectivity problems and their solutions.

Recommended Learning Resources: Windows Server 2003 Server Network Infrastructure

Text Books	• Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure. ISBN-10: 0470068876 • Microsoft Official Academic Course: Planning And Maintaining A Microsoft Windows Server 2003 Network Infrastructure by Craig Zacker and Drew Bird. ISBN-10: 0072944897
Study Manuals	BCE produced study packs
CD ROM	Power-point slides
Software	Windows Server 2003