



NEW SYLLABUS DHNE

Diploma in Hardware and Network Engineering

Revised 2013-2015

A unit of





Semester - 1

Duration: 720 hrs. The edge

Semester 1 is designed for the novice entries into IMS the world of Infrastructure Management Service. The curriculum in this semester is tailored to gear up students to develop the basic IMS knowledge and further it is fashioned to guide them from basics to advanced topics.

The students, to start with, will be educating or upgrading their skill set pertaining to Digital Electronics. MS Office 2007 is the next essential course which would enhance the students' acquaintance on the most popular applications used regularly such as Word, Excel, PowerPoint, Outlook and Access.

Learning A+ will augment the students' comprehension about the fundamentals of computer and the skill set pertaining to assembling and troubleshooting a computer system. In Network+, they learn about networking standards and troubleshooting networks. Learning about the operating systems in A+, the students will step further to discover the latest revolution of Microsoft, the Windows 7 OS. This is one of the latest and most popular client operating systems that is currently phenomenal in the job market.

Since Red Hat Linux is one of the most popular flavors of UNIX, the students will be introduced to the basics of Linux operating systems. It becomes important to understand how to operate laptops, use the special features of laptops, troubleshoot and maintain laptops, all of which are roofed under the topic Laptop Maintenance.

Organizations are growing smarter with potential growth in the IT industry. Along with quality work they emphasis on public relations which becomes the essence of the business. In order to fulfill both, the students must acquire technical skills as well as the communication and personality development skills which is learnt by students in this semester.

This semester leads to certifications like

- | | |
|---|--------|
| • Microsoft Certified Application Specialist on Microsoft Office 2007 | 100HRs |
| • A+ IT technician | 40HRs |
| • Network + | 140HRs |
| • MCTS: Windows 7 Configuration | 60HRs |
| • Desktop & Laptop Maintenance | 60HRs |
| • Red Hat System Administration I(RH124) | 160HRs |
| • Advance communication | 160HRs |

Job Profiles

Once the students complete this semester they'll be exposed to various job profiles like;

- Application Specialist on Microsoft Office 2007
- Hardware Engineer
- PC Support Engineer
- Tech Support Specialist
- Desktop Support Technician and many more.

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Desktop & Laptop Maintenance

- Desktop & Laptop Features and Function keys
- Common Desktop Laptop Problems
- Function of Desktop & Laptop
- Power Options For Desktop & Laptops
- Hibernate Features
- Standby Features
- Laptop battery
- Common laptop problems
- Best practices
- General maintenance of the Desktop & laptop

Microsoft certified Application Specialist on Microsoft Office 2007

- Word 2007 Basics
- Editing and Proofreading a Document
- Bulleting and Numbering
- Working with Tables
- Word Styles
- Word Art, Clip Art
- Mail Merger
- Excel 2007 Basics
- Printing in Excel
- Charting
- Creating Tables
- Excel Workbook
- Special Features
- PowerPoint 2007 Basics
- Charts and Objects
- Customizing PowerPoint
- Online Presentation
- Access 2007 Basics
- Forms
- Sorting Records
- Filters
- Information Accuracy
- Outlook 2007 Basics
- Electronic Mails
- Inbox Management
- Calendar
- Events and Meetings

Installing and Configuring Windows 7 (MCTS)

- Installing Windows 7
- Preparing the Windows 7 Installation Source
- User and Group Management
- Password Reset Disk
- Parental Control
- Upgrading to Windows 7
- User Profiles Management
- System Images Capturing





- Virtual Hard Disk Files
- Application Compatibility
- Introducing Windows 7
- Windows Aero and Mouse operations
- Switching Users
- Disks and Device Drivers
- Network Settings
- IPv4/IPv6 Configuration
- Network Configuration
- Folder and File Access
- Branch Cache
- Printers in Windows 7
- Windows 7 Desktops Security
- Windows 7 Client Computers
- Mobile Computing and Remote Access in Windows 7

A+

- Computer Components Identification
- Assemble and Disassemble Computer Components
- Components in Portable Computers
- Devices Installation and Configuration
- Characteristics of Cabling and their Connectors
- Common IDE, SCSI and Peripheral Devices
- Optimize PC Operations Optimization
- Determine the Issues that must be Considered when upgrading a PC
- Popular CPU Chips
- Types of Memory (RAM)
- Types of Motherboards and their Components
- Printer Technologies, Interfaces and Options/Upgrades
- Troubleshoot Common Printer Problems
- Operating System Fundamentals OS Installation
- Common Error Codes Interpretation
- Networking Capabilities of Windows
- Basic Internet Protocols and Terminologies
- Procedures for Establishing Internet Connectivity

Network +

- Logical or Physical Network Topologies
- Networking Standards
- Characteristics of Different Types of Cables
- Different media Connectors and Describe their uses
- Purposes, Features and Functions of Network Components
- General Characteristics of the Different wireless technologies
- Different Network Protocols
- Classful IP and Their Subnet Masks
- Subnetting
- Private and Public network addressing schemes
- WAN Technologies
- Security protocols and authentication protocols
- Basic capabilities different server operating systems



- Benefits and characteristics of using a firewall and proxy service
- Main characteristics and purpose of extranets and intranets
- Antivirus software
- Fault Tolerance
- Network Utility to Troubleshoot Networks
- Impact of modifying, adding or removing network services
- Network Troubleshooting with Physical Topology

Red Hat System Administration I (RH124)

- Get Started with the GNOME Graphical Desktop
- Manage Files Graphically with Nautilus
- Get Help in a Graphical Environment
- Configure Local Services
- Manage Physical Storage I
- Manage Logical Volumes
- Monitor System Resources
- Manage System Software
- Get Started with Bash
- Get Help in a Textual Environment
- Establish Network Connectivity
- Administer Users and Groups
- Manage Files from the Command Line
- Secure Linux File Access
- Administer Remote Systems
- Configure General Services
- Manage Physical Storage II
- Install Linux Graphically
- Manage Virtual Machines
- Control the Boot Process
- Deploy File Sharing Services
- Secure Network Services

Communication Skills and Personality Development

- Importance of Effective Communication
- Types of Communication
- Scope of Written Communication
- Types of Writing
- Effective Writing
- Reading Skills
- Listening
- Improving one's Vocabulary
- Root words
- Usage of words with similar meaning
- Homophones, Synonyms & Antonyms
- Personality, its types
- Significance of Personality-An organizational perspective
- Public Speaking - As part of personality development
- Group Discussion - A practice of corporate personality development Interviews
- Presentation Skills - The root of Personality Development
- Acting your speech (intonation)- Effective public speaking tips
- Public Presentation
- Nature and scope of a group discussion





Semester - 2

Duration: 420 hrs.

With an ample essence of basics, the students are set to learn the advanced topics in semester II. Here the focus is on much adored technologies such as Microsoft, Cisco and Linux. Semester II includes the latest trend in server side of the Microsoft technologies by covering Server 2008 papers for the students.

With MCITP server administration, students will learn to configure, manage and support groups, domain names and client settings. They will get an in-depth knowledge about the deployment, security, management and maintenance of a server.

With a base knowledge on Microsoft, the students will be taught the Red Hat Linux system administration in detail. They will learn to install the Linux operating system, create users and groups; assign permissions to files, administer and troubleshoot a Linux system and network environment. The students are lead to learn yet another essential technology Cisco CCNA. This enables the students to gain the knowledge and skills necessary to select, connect, configure, and troubleshoot the various Cisco networking devices.

In any network environment, securing networks is a crucial job. Therefore, the students learn about the Check Point Firewall software to secure networks from attacks. They also learn to secure resources within a network from the external network.

To further enhance the personality traits of the students, they are exposed to Personality Development and Communications skills training at advanced levels. Effective communication, public speaking, leadership qualities, time management and interview skills are the few essential topics are covered in this semester.

This semester leads to certifications like:

- | | | |
|---|---|--------|
| • | MCITP- Server Administrator | 60Hrs |
| • | Red Hat Certified System Administrator (RHCSA) | 80Hrs |
| • | Cisco Certified Network Associate (CCNA) | 120Hrs |
| • | Check Point Certified Security Administrator (CCSA) | 40Hrs |
| • | Personality Development | 120Hrs |

Job Profiles

Once the students complete this semester they'll be exposed to various job profiles like;

- System Administrator on Windows Server 2008
- Linux Administrator
- Network Administrator
- Check Point Administrator
- Desktop Management Engineer and many more.

MCITP Server Administration: Windows Server 2008 Administration

- Windows Server 2008 Installation and Administration
- Automated Server Deployment
- Windows Deployment Services and Network Connectivity



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- IPv6 in Windows Server 2008
- Domain and Forest Functionality
- Group Policy in Windows Server 2008
- Application Servers and Deployment
- Server and Application Virtualization
- Terminal Services RemoteApp
- File and Print Servers
- Provisioning Data and Credential Delegation
- Remote Administration Technologies
- Windows Server 2008 Patch Management Strategies
- Replica Mode and Autonomous Mode
- WSUS (Windows Server Update Services)
- Server Security and Remote Access
- VPN (Virtual Private Network) Protocols
- Network Policy Server and Remote Access Accounting
- Network Access Protection
- Storage Area Networks and Logical Unit Numbers (LUN)
- Certificate Services Role-Based Administration
- Credential Roaming and Web Enrollment Support
- Online Responder for Certificate Services
- Network Device Enrollment Service
- Clustering and High Availability
- Backing Up Data and Disaster Recovery

MCITP Server Administration: Windows Server 2008 Active Directory, Configuring

- Windows Server 2008 Active Directory
- Organizational Units and Domain Controllers
- Global Catalog
- Operations Masters and Server Manager
- Global Catalog Servers
- RID Master
- Transferring and Seizing of Operations Master Roles
- Active Directory and DNS
- Command-Line DNS Server Administration
- Zone Transfers and Replication
- Active Directory Sites and Replication
- Active Directory Sites
- Active Directory Lightweight Directory Services (AD LDS)
- Active Directory Rights Management Services (AD RMS)
- Read-Only Domain Controllers
- Active Directory Federation Services (ADFS)
- Windows Server 2008 Virtualization
- Active Directory Objects and Trusts
- Organizational Units
- Group Membership
- Shell Access Policies
- Group Policy to Deploy Software
- Backing Up and Recovering Active Directory
 - Use of Windows Server Backup
- Active Directory Certificate Services





- Installing Active Directory Certificate Services
- Certificate Templates and Revocation

MCITP Server Administration: Windows Server 2008 Network, Infrastructure, Configuring

- Windows Server 2008 Installation
- DNS Server Role and Domain Name System
- Recursive and Iterative Queries
- Forward and Windows internet Name System
- Overview of the DHCP Server Role
- Dual Layer Architecture
- ISATASP Tunneling and Port Proxy
- Transitioning from IPv4 to IPv6
- Network and VPN Access
- Network Policy Server
- RADIUS Clients and Servers
- NPS Authentication Methods
- Log File Properties
- SQL Server Logging
- Overview of IPsec
- Storage Technologies
- Windows Server 2008 Storage Management Overview
- Common Capacity Management Challenges
- File Server Resource Manager
- Quota Management
- Network load balancing manager
- Security and Audit policy
- WSUS Administration

Cisco Routing and Switching

(CCNA - ICND I & ICND II)

- Basic Networking Concepts & OSI Reference Model
- Function of Ethernet
- Network Security
- Wireless Network Technology
- Ethernet Switch Configuration
- Subnetting
- Routers and Router Configuration
- Different WAN Technologies
- Advanced dynamic Routing Protocols
- Route Summarization
- Link State Routing Protocol
- EIGRP
- Advanced Switching Technology
- VLAN and Trunks
- Access Control List
- Network Address Translation (NAT)
- IP version 6
- Wide Area Network
- Frame Relay





Red Hat System Administration II (RH134)

- Automated Installations of Red Hat Enterprise Linux
- Accessing the Command Line
- Intermediate Command Line Tools
- Regular Expressions, Pipelines, and I/O Redirection
- Network Configuration and Troubleshooting
- Managing Simple Partitions and Filesystems
- Managing Flexible Storage with Logical Volumes
- Access Network File Sharing Services
- Managing User Accounts
- Controlling Access to Files
- Managing SELinux
- Installing and Managing Software
- Managing Installed Services
- Analyzing and Storing Logs
- Managing Processes
- Tuning and Maintaining the Kernel
- System Recovery Techniques

Checkpoint Certified Security Administrator

- Check Point NGX Pro R60
- Installations and configurations
- Graphical Interface
- Policies
- Network Address Translation
- Tracking and Alerts
- Encryption and VPNs
- SmartDefense

Communication Skills and Personality Development

- Scope of verbal Communication
- Formal Communication
- Informal Communication
- Phonetics
- Pronunciation
- Listening
- Accent and Neutral Accent
- Reading a formal Text
- Pace of Communication
- Dictionaries
- Interviews and its types
- Skills required for facing an interview
- Effective Presentation Skills
- Significance of Leadership
- Factors of Leadership
- Qualities of a good leader
- Interviewer and Interviewee - Roles and Responsibilities



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