

**CERTIFICATE COURSE – 1<sup>ST</sup> YEAR**

**2012-13 onwards**

**ADD –ON COURSE**

**Computer Hardware Networking and Ethical Hacking**

**Semester I**

**Paper Code : NEH-1**

**Paper Name : Basics of computer**

**Course Duration : 6 months**

**Total Course length : (Theory-12 Credits /180 Hrs)**

**(Practical/Fields work -08 Credits/ 120 Hrs)**

**\*1 credit =15 Hrs**

**Max Marks : 100(Theory Marks : 80 /Internal Assessment : 20)**

**Times Allowed : 3hrs**

**NOTE:** The examiner will set 9 questions, first (I) question will be compulsory which will be set from the entire syllabus. This question will be short answer type carrying 2 mks each. 8 question will be set out of four units, 2 questions from each unit and the student will be required to attempt 1 question from each unit

**UNIT – I**

**MS Word**

**(3 credits)**

An overview of the basics of word processing, how to use spell check, grammar check, and the thesaurus, gain proficiency in editing and formatting a document, how to use the undo and redo commands,

moving and copying text within a document, typography, paragraph formatting and column formatting, how to enhance a document, wizards and templates, and tables

## **UNIT – II**

### **MS Excel**

**(3 credits)**

Creating an excel worksheet, saving an excel worksheet, Opening an existing workbook, Using formula and functions, Printing a worksheet, Creating a simple expense worksheet.

## **UNIT – III**

### **MS PowerPoint**

**(2 credits)**

Creating a PowerPoint presentation, saving a PowerPoint presentation, Working with an existing PowerPoint presentation, Using templates to create a presentation, Adding animation to slides

### **Internet**

**(1 Credit)**

Basics of Internet, History of Internet , ARPAnet, NSFnet, Site Surfing, Search Engines, Email Accounts, Receiving Mails, Composing Mails, Spam, Calender

## **UNIT – IV**

### **Basic Computer Hardware (A+)**

**(3 credits)**

Introduction, Getting started with PC hardware support, Operating systems, Electricity and power systems, CPUs and motherboards, Basic Input/Output System, Memory systems, Bus structures, Expansion cards, Ports, connectors, and cables, Data storage devices, Video and multimedia input/output devices, Printers, Portable computers and

devices, Monitoring and management, Connecting computers, Security, Safety, Troubleshooting and maintaining a PC, Professionalism and communication, Windows installation and upgrades. Electricity and power systems, CPUs and motherboards, Memory systems, Expansion cards, Data storage devices, Ports, connectors, and cables, Printers and scanners, Display devices, Portable computers and devices, Networking, Security, Maintaining the PC environment.

### **Recommended Books**

- 1) Computer with M.S.Office 2000 -By Icon and Icon(TM)
- 2) Computer today -By Donald (Mc Graw Hill)
- 3) A+ guide to hardware- By Jean Andrews
- 4) How computers really works- By Milind s. pandit.
- 5) Servicing personal computers- By Michael H Tooley.

**(NEH – 2) Practical**

**(8 Credits/120 Hrs)**

**Practical will be based on the syllabus of theory paper of Basics of computer**

**(Practical Marks : 75 Viva Voce : 10 & Practical file :15)**

## Semester I I

**Paper Code :** NEH-2

**Paper Name :** Concepts of Networking

**Course Duration :** 6 months

**Total Course length :** (Theory-12 Credits /180 Hrs)  
(Practical/Fields work -08 Credits/ 120 Hrs)  
\*1 credit =15 Hrs

**Max Marks :** 100(Theory Marks : 80 /Internal Assessment : 20)

**Times Allowed :** 3hrs

**NOTE:** The examiner will set 9 questions, first (I) question will be compulsory which will be set from the entire syllabus. This question will be short answer type carrying 2 mks each. 8 question will be set out of four units, 2 questions from each unit and the student will be required to attempt 1 question from each unit

### **UNIT – I**

#### **Networking (N+) ( 3 credits)**

Basic networking concepts, The OSI model, Network adapters, Introducing protocols, Network cabling and devices, Internetworking components, Remote and WAN connectivity, Troubleshooting hardware components.

## **UNIT – II**

**( 3 credits)**

TCP/IP fundamentals, TCP/IP addressing and subnetting, Name resolution, Firewalls and proxies, Troubleshooting network connectivity.

## **UNIT – III**

**( 3 credits)**

Identifying network operating system features, Network clients, Directory services, Accessing and managing resources in a Windows network,

## **UNIT – IV**

**( 3 credits)**

Monitoring and troubleshooting a Windows server, Managing and troubleshooting NetWare network resources, Fault tolerance and disaster recovery, Routine maintenance. Troubleshooting. Installing NetWare 6.5. Installing Windows Server 2003

## **Recommended Books**

- 1) Computer Networking -By Tanenbaum (Pearson Education)
- 2) Computer Network - By U.Black

**NEH – 4 ( Practical)**

**(8 Credits/120 Hrs)**

**Practical will be based on the syllabus of theory paper of Concepts of Networking**

**Max Marks : 100**

**(Practical Marks : 75 Viva Voce : 10 & Practical file :15)**

**DIPLOMA COURSE – 2<sup>ND</sup> YR.**

**2013-14 onwards**

**Semester III**

**Paper Code :** NEH-5

**Paper Name :** Windows Environment

**Course Duration :** 6 months

**Total Course length :** (Theory-12 Credits /180 Hrs)  
(Practical/Fields work -08 Credits/ 120 Hrs)  
\*1 credit =15 Hrs

**Max Marks :** 100(Theory Marks : 80 /Internal Assessment : 20)

**Times Allowed :** 3hrs

**NOTE:** The examiner will set 9 questions, first (I) question will be compulsory which will be set from the entire syllabus. This question will be short answer type carrying 2 mks each. 8 question will be set out of four units, 2 questions from each unit and the student will be required to attempt 1 question from each unit

**UNIT – I**

**Basic Windows Server 2008 (3 credits)**

Introduction, Installation, System Configuration, Storage Devices, Network Configuration, Wide Area Networking, Local Security Management, Security For Domain Members, Desktop Management, Resource Management, Printer Management, Performance, Fault Tolerance and Recovery



## **UNIT – II**

### **Managing and Maintaining a Windows Server 2003 Environment (3 credits)**

Introduction to Windows Server 2003, Managing Hardware Devices, Creating and Managing User Accounts, Managing File Access, Managing Disks and Data Storage, Advanced File System Management

## **UNIT – III** **(3 credits)**

Managing Printers, Using Group Policy, Server Administration, Monitoring Server Performance, Managing Backups and Disaster Recovery, Administering Web Resources, Windows Server 2003 Security Features

## **UNIT – IV**

### **Implementing, Managing and Maintaining a Windows Server 2003 Network (3 credits)**

Networking Overview, Configuring Network Protocols, TCP/IP Architecture, Dynamic Host Configuration Protocol, Manage and Monitor a DHCP Server, Name Resolution, Domain Name System, Windows Internet Naming Service, Internet Protocol Security (IPSec), Remote access, Internet Authentication Service, Routing, Security templates, Troubleshooting Windows Server 2003 networks

#### **Recommended Books**

- 1) Managing & maintaining a windows server 2003 environment -- By Beheler ann, L.J. Zacker, Microsoft Press
- 2) MCSA/MCSE 70-291: Implementing, managing and maintaining a Microsoft Windows server 2003 Network Infrastructure:--- By Will Schmied
- 3) Mastering windows server 2008 networking foundations---By John paul Mueller.

**NEH – 6 ( Practical)**

**(8 Credits/120 Hrs)**

**Practical will be based on the syllabus of theory paper of Computer  
Networking**

**Max Marks : 100**

**(Practical Marks : 75 Viva Voce : 10 & Practical file :15)**

## Semester I V

**Paper Code :** NEH-7

**Paper Name :** Windows Administrator and security

**Course Duration :** 6 months

**Total Course length :** (Theory-12 Credits /180 Hrs)

(Practical/Fields work -08 Credits/ 120 Hrs)

\*1 credit =15 Hrs

**Max Marks :** 100(Theory Marks : 80 /Internal Assessment : 20)

**Times Allowed :** 3hrs

**NOTE:** The examiner will set 9 questions, first (I) question will be compulsory which will be set from the entire syllabus. This question will be short answer type carrying 2 mks each. 8 question will be set out of four units, 2 questions from each unit and the student will be required to attempt 1 question from each unit

### UNIT -I

#### **Implementing and Administering Security in a Windows Server 2003 Network (3 credits)**

Introduction to Network Security, Implementing Security Policies, Analysing and Deploying Security Policies, Troubleshooting Security Policies, Planning and Deploying Patch Management. Managing and Troubleshooting Software Updates, Planning and Deploying IPSec, Troubleshooting IPSec Policies, Planning and Deploying Public Key Infrastructure, Planning and Deploying Authentication for Remote Access, Planning and Configuring Security for Wireless Networks, Troubleshooting Access Problems, Monitoring Systems

## **UNIT – 11**

### **Planning and Maintaining a Windows Server 2003 Network Infrastructure ( 3 credits)**

Windows Server 2003 network planning, TCP/IP architecture, Plan network data flow, Plan and configure routing and switching, Plan, configure, and troubleshoot DHCP, Plan, configure, and troubleshoot WINS, Plan a DNS strategy, Manage and troubleshoot DNS, Plan and manage Certificate Services, Plan and manage IPsec, Plan network access, Plan and implement server availability and scalability, Plan server and network security, Problem recovery.

## **UNIT – III**

### **Implementing and Maintaining a Windows Server 2003 Active Directory Infrastructure (3 credits)**

Introduction to Active Directory, Name resolution and DNS. Design philosophy, Architecture, Logical design, Physical design, Replication, Active Directory operations masters, Active Directory authentication and security, Managing users, groups, computers, and resources, Group Policy for corporate policy, Managing software with Group Policy, Monitoring and optimising Active Directory, Disaster recovery,

## **UNIT – 1V**

### **Designing Security for a Windows Server 2003 Network (3 credits)**

Designing a secure network framework, Securing servers based on roles, Designing a secure public key infrastructure, Securing network management, Securing network services and protocols, Securing

Internet Information Services, Securing VPN and extranet communications, Securing Active Directory, Securing network resources, Securing network clients

### **Recommended Books**

- Windows Server 2003: the complete reference (McGraw-Hill/Osborne)
- Learning Windows Server 2003 –By Jonathan Hassell
- Microsoft Windows Server 2003 Administrator's Companion- By Charlie Russel, Sharon Crawford, Jason Gerend

**NEH – 8 ( Practical)**

**(8 Credits/120 Hrs)**

**Practical will be based on the syllabus of theory paper of Windows Administrator and security**

**Max Marks : 100**

**(Practical Marks : 75 Viva Voce : 10 & Practical file :15)**

**ADVANCED DIPLOMA – 3<sup>rd</sup> Yr.**

**2014-15 onwards**

**Semester V**

**Paper Code :** NEH-9

**Paper Name :** Network Applications

**Course Duration :** 6 months

**Total Course length :** (Theory-12 Credits /180 Hrs)  
(Practical/Fields work -08 Credits/ 120 Hrs)  
\*1 credit =15 Hrs

**Max Marks :** 100(Theory Marks : 80 /Internal Assessment : 20)

**Times Allowed :** 3hrs

**NOTE:** The examiner will set 9 questions, first (I) question will be compulsory which will be set from the entire syllabus. This question will be short answer type carrying 2 mks each. 8 question will be set out of four units, 2 questions from each unit and the student will be required to attempt 1 question from each unit

**UNIT - 1**

**Networking (3 credits)**

Introduction to networking, Network Types, Network Topologies, Networking media, MAC vs. IP addresses, Cabling, LAB-making cables, Network Technologies, Network Devices, Testing connectivity, OSI Model, TCP/IP Model, Data Encapsulation, Introduction To Addressing, IP Addressing-Classfull, Classless Addressing, CIDR, Subnetting with VLSM, TCP/IP Application & Transportayers

## **UNIT - 11**

### **Routers**

**(3 credits)**

Introduction to Routers, Routers Components & Models, Routers Startup, Routers Command line Interface, Routers Basic configuration Commands, Backing up & Restoring the "Cisco IOS" & "Configuration File", Adding Host Names to the "Host tables", LAB-basic configuration, DHCP "Dynamic Host Configuration Protocol", LAB-DHCP, Learning About Other Devices (CDP), Telnet, Password Recovery, IP Routing, Static Routing, Default Routing, Introduction to Dynamic Routing, Routing Protocol Basics, RIP "Routing Information Protocol", LAB-RIP, IGRP "Interior Gateway Routing Protocol", LAB-IGRP,

## **UNIT- 111**

### **Firewall and Wireless Technology**

**(3 credits)**

EIGRP, OSPF, Perimeter, Firewall, and Internal Routes, Access Control Lists-Standard, Access Control Lists-Extended, Access Control Lists-Named, NAT (Network Address Translation).

## **UNIT- 1V**

**(3 credits)**

Introduction to wireless technology, Cisco Unified wireless solution, Configuring our wireless Internetwork, Introduction to IPv6, IPv6 addressing and expressions, How IPv6 works on the Internetwork, IPv6 Routing Protocols, Migrating to IPv6, Configuring IPv6, Introduction to WANs, Cable and DSL, PPP & HDLC encapsulation Methods, Frame Relay, LAB-Frame Relay, Introduction To Switches & Switches Models, STP "Spanning Tree Protocol", Basic Switches Configuration, LAB-basic Switches Configuration, VLANs "Virtual LANs",

### **Recommended Books**

Computer Networking -By Tanenbaum (Pearson Education)

- 1) Computer Network By U.Black



**NEH – 10 (Practical)**

**(8 Credits/120 Hrs)**

**Practical will be based on the syllabus of theory paper of  
Network Applications**

**Max Marks : 100**

**(Practical Marks : 75 Viva Voce : 10 & Practical file :15)**

## Semester VI

**Paper Code :** NEH-11

**Paper Name :** Concepts of Ethical Hacking

**Course Duration :** 6 months

**Total Course length :** (Theory-12 Credits /180 Hrs)  
(Practical/Fields work -08 Credits/ 120 Hrs)  
\*1 credit =15 Hrs

**Max Marks :** 100(Theory Marks : 80 /Internal Assessment : 20)

**Times Allowed :** 3hrs

**NOTE:** The examiner will set 9 questions, first (I) question will be compulsory which will be set from the entire syllabus. This question will be short answer type carrying 2 mks each. 8 question will be set out of four units, 2 questions from each unit and the student will be required to attempt 1 question from each unit

### UNIT -1

**(3 Credits)**

**Ethical Hacking:** Introduction, Networking & Basics, Foot Printing, Google Hacking, Scanning, Windows Hacking, Linux Hacking, Trojans & Backdoors, Virus & Worms, Proxy & Packet Filtering, Denial of Service, Sniffer, Social Engineering,

## **UNIT -1I**

**(3 Credits)**

Introduction to Computer Systems and Networks , information systems and networks (including wireless networks) and their role in industry business and society, System and Network Vulnerability and Threats to Security , various types of attack and the various types of attackers in the context of the vulnerabilities associated with computer and information systems and networks Physical Security, Steganography, Cryptography, Wireless Hacking, Firewall & Honeypots, IDS & IPS, Vulnerability, Penetration Testing, Session Hijacking, Hacking Web Servers, SQL Injection, Cross Site Scripting, Exploit Writing, Buffer Overflow, Reverse Engineering, Email Hacking, Incident Handling & Response, Bluetooth Hacking, Mobile sPhone Hacking

## **UNIT -1II**

**(3 Credits)**

An introduction to basic ethical hacking tools and usage of these tools in a professional environment in a form of project

## **UNIT -1V**

**(3 Credits)**

An introduction to the particular legal, professional and ethical issues likely to face the domain of ethical hacking. ethical responsibilities, professional integrity and making appropriate use of the tools and techniques associated with ethical hacking.

## **Recommended Books**

- Hands-On Ethical Hacking and Network Defense – By Michael T. Simpson, Kent Backman, James Corley
- Official Certified Ethical Hacker Review Guide – By Steven DeFino, Barry Kaufman, Nick Valenteen.
- The Basics of Hacking and Penetration Testing: Ethical Hacking and Penetration Testing Made Easy (Syngress Basics Series) [Paperback]
- Hands-On Ethical Hacking and Network Defense [Print Replica] [Kindle Edition]

**NEH – 12 (Practical)**

**(8 Credits/120 Hrs)**

**Practical will be based on the syllabus of theory paper of Concepts of Ethical Hacking**

**Max Marks : 100**

**(Practical Marks : 75 Viva Voce : 10 & Practical file :15)**