Syllabus
of

Diploma in Hardware and Networking Technology

(One Year Course)

DHNT
PAPER -I: BUSINESS COMMUNICATION SKILL
(DHNT1)

Unit – I : Introduction to Communication

Basic Forms of Communication, Process of Communication, Principles of Effective Communication. Media of Communication, Types of Communication, Objectives of Upward and Downward Communication, Element of Communication Process, and Barriers to Effective Communication.

Unit –II: Business Letter Writing
Need , Function's & Types of Layout , Types of Business Letters – Persuasive , Request , Complaints, Business Enquire, Etc. Aids to Correct Writing, Practical Gramma, and Sentence Error, Punctuation, Vocabulary   Building, **Writing Effectively**: Planning Beginning and Ending A Letter , Factful use of Language , Asking for Action, Handling Negative , Talking About Error, Active and Passive Voice , Technique of Emphasis.
Business Manners – Body Language, Gestures, Dialogues Skill, Feedback Skill, Telephone Dialogue, Telephone Etiquette and Participating In Business Meeting.

Unit – III : Presentation Skill
Various Presentation Tool , Guidelines of Effective Presentation Overcoming Boredom Factor , Interactive Presentation , Presentation As Part of Job Interview , Art of Effective Listening – Listening Skill , Block to Effective Listening , Improving Listening Skill Use of Silence In Communication .
Resume Writing Skill – Guidelines for A Good Resume. Covering Letter Construction and Use of Electronic Resume.

Unit – IV : Group Communication
Problem of Group Communication , Types of Meeting Conference Committees   - Advantages and Disadvantages of Meeting , Conduct of Meeting Chairman's Function , and Participant's Responsibilities .
Report and Committee Reports. Uses of Summarization Skills, Making A Precise , Drafting Telegrams .

Books:
1) Business Communication – Urmlila Rai , S.M.Rai - Himalayas Publishing House , Asha Kaul – Prentice Hall of India
2) Business Correspondence & Communication Skills – Kapoor (S.Chand & Co.)
3) Effective Skills :- Ravi Agrawal – Sublime Publishing Jaipur
4) Developing Communication Skills – Mohan – Macmillan Publishing

DHNT
PAPER -II: INFORMATION AND COMMUNICATION TECHNOLOGY
(DHNT2)

Unit-I: Introduction to It and Computers
Block Diagram of Computer, Functioning of Computer, Generations of Computer, Classification of Computers, Characteristics, Advantages & Limitations of Computer.
Computer Memory: Primary & Secondary, Types of Primary Memory, Registers.
Input Devices: Keyboard **Locator Device:** Mouse, Joy Stick Digitizing Tablet **Pick Device:** Light Pen, Touch Screen Track Ball **Voice Recognition:** Microphone, Scanning: MICR, OCR, OMR, Barcode Reader, **Vision Capturing:** Webcam, Digital Camera Point of Scale, Touch Pad, Smart Card
Output Devices: VDU, Dot Matrix, Laser and Inkjet Printers, Plotters.
Storage Devices: Pen Drive, Hard Disk, and Optical Disk, Blue Ray Disc.

Unit-II: Hardware and Software Concept and Programming Language
Introduction, Types of Software, Characteristics of Good Program, Development of Programming **Languages:** Machine Language, Assembly Language, High Level Language.
Number System: Decimal, Binary, Octal, Hexadecimal Number Systems, Features & Conversions.
BCD, EBCDIC & ASCII Codes.

Unit-III: Windows
Features of Windows, GUI, Operating with Windows, Desktop, Taskbar, Windows Explorer, Control Panel, My Computer, My Documents, Recycle Bin
Windows Accessories: Calculator, Notepad, Paint, System Information, Disk Management, Disk Defragmentation, Disk Cleanup

Unit–IV: Network & Internet
Computer Communication, Need for Networks, Communication Device, Types of Network- LAN, WAN, MAN, Concept of Network Topology, Types of Topologies and Its Advantages and Limitations. OSI Model.
Internet: Basic Internet Terms, Internet Addressing, Services Provided By Internet, Detail About E-Mail, Search Engine, Basic of Intranet. Social and Ethical Issue, YouTube, FaceBook, Linkedin, Orkut
Open Source Terminologies: Open Source Software, Freeware, Shareware, Proprietary Software, FLOSS, GNU, FSF, OSI

Books:
1) Peter Nortorn's, " Introduction to Computer", Tmh, 2004, ISBN-0-07-05-3142-0
2) S.B. Kishor, "Information Technology", Das Ganu, ISBN 978-81-921757-9-9
3) Pradeep K. Sinha and Priti Sinha " Computer Fundamentals", Bpb, 2007, ISBN-10:81-7656-752-3/13:978-81-7656-752-7
4) Chetan Shrivastava " Fundamentals of Information Technology", Kalyani Publishers, 2002, ISBN-81-7663-576-6
5) Dr Madhulika Jain,"Information Technology Concept", Bpb,2006,ISBN – 81-7656-276-9

DHNT
PAPER –III : COMPUTER NETWORKING
(DHNT3)

Unit –I : Basic Network Concept

Network Concept , Networking Operating System, Types of Networks, Network Interface Card, Hub, Cables, Expansion Devices, Wireless Networking , Connecting A Peer-to-Peer Network, Setting Up Windows Networking , Installing The NIC Driver , Installing The Clients and Protocols, Computer Communication and Networking Concept .

Unit – II : Data Transmission

Introduction of Data Transmission :- Forms of Data Transmission, Analog & Digital Communication Channels, Bandwidth, Narrow, Voice & Broad Band, Data Transmission Media- Wire, Fiber Optics, Cables, Satellite, Microwave, Telephone Network Topology, Study of OSI Networking Model, Data Travels Through The OSI Layers.
Networking Hardware Components, Severs Hubs, Routers, Switches, Bridges, Gateways, Cabling and Cable Plants/Server & Workstation Hardware, Reliability and Severability Feature. Network and Maintenance of Network Cabling, Solving Cable Problem.

Unit-III   : Networking Protocols

Understanding Networking Protocols , TCP and UDP , IP Packets and IP Addressing, IP Subnetting, Subnet Masks, Understanding of Other Internet Protocols Domain Name System, Dynamic Host Configuration Protocol (DHCP), Hypertext Transfer Protocol (http), File Transfer Protocol (FTP), Net News Transfer Protocol (Nntp), Telnet, Simple Mail Transfer Protocol (SMTP). Compare Important Proprietary Protocols – Novell's IPX/SPX, NETBIOS and NETBEUI Protocols.

Unit – IV: Introduction of Internet
Internet History and Uses of Internet, Connecting of Internet , Dial-Up-Access and Direct Access, Domains and Address, DNS and IP Address, Using The Www , Internet Browsing The Web, Server on Internet, **E-Mail Services :-** Anatomy of E-Mail, E-Mail Address, Finding E-Mail Address, Attaching Files, Opening Attachments, Search Engines, Types of Search, Chat Service, Uploading and Downloading Files, Computer Virus and Antivirus, Software.

Book :
1) Computer Networks – Andrew S. Tanenbaum (Prentice Hall of India), 4th Edition , ISBN 0131651838
2) Networking – A Beginner's Guide :-Bruce A. Hallberg (Tmh) ISBN 0070582351
3) Working with Windows 2000 Server - Prentice Hall of India
4) Internet Technology and Web Design,ISRD Group, TMH, ISBN 0-07-107276-4

DHNT
PAPER -IV: BASIC ELECTRONICS
(DHNT4)

Unit I : Number System & Data Representation
Number System : Binary, Octal, Decimal, Hexadecimal and Their Interconversion.
Binary Codes : BCD, ASCII, EBCDIC Codes Their Advantages and Disadvantages. **Data Representation :** Positive, Negative, Maximum and Minimum Number Representation.

Unit II : Binary Arithmetic
Binary Addition, Decimal Subtraction Using 9's and 10's Compliment, Binary Subtraction Using 1's and 2's Compliment, Multiplication and Division.

Unit III : Logic Gates
Truth Tables, Properties and Symbolic Representation of NOT, AND, OR, NOR, NAND, EX-OR , EX- NOR GATES. NOR and NAND Gates as a Universal Gates.

Unit IV : Basic Things for CPU
Electricity Voltage, Current, Power, Resistance, Diode, Rectifier Zinner Led, Rectifier Transistor Pnp,Npn,Npa, Transformer, Testing Component, List of Equipments for Pc Maintenance.

Books :
1) Digital Electronics : Floyd & Jain – Tata Mcgraw Hill ISBN-8189411322
2) Digital Electronics : Virendra Kumar –New Age International . ISBN- 8122413463
3) Digital Systems , Principles and Applications : Tocci – Neal S. Widmer – ISBN 8131723283

DHNT
PAPER –V : PC – MAINTENANCE
(DHNT5)

Unit I
Preventive Maintenance: Introduction, Need, Tools, Materials. Procedures : Active Hardware Maintenance, Active Software Maintenance, Passive Maintenance Procedures, Heat and Temperature Control, Dust and Pollution Control, Ventilation Control, EMI Electrostatic Discharge Control, Humidity and Corrosion Control, Shock and Vibration Control, Preventive Maintenance Schedule. BIOS and CMOS, Working with The BIOS Setup Program..

Unit II
History & Study of Different Types of CPUs, Terminology Used with CPU, Data Processing Inside CPU, RAM & ROM, Different Types of ROM, Virtual Memory, Installing and Removing Memory. Video Cards and Monitors, Display Resolution, Features, Video Driver, CRTs Working, LCDs Working, Monitor Resolution, Interfacing, Refresh Rate, Monitor Driver, Adjusting Display Settings in Windows

Unit III
Study of Different Types of Drives, Hard Drive Interfaces- IDE, SCSI, SATA Hard Drive Performance, Installing Hard Drives, Partitioning, Disk Formatting, Common Hard Drive Problems. Installation of Operating System and Software: Installing Video Card: Testing, Plug in the Video Card, Providing Power to ihe Motherboard, Testing. Installing The CD Rom Drive, Installing Key Board and Mouse, Installing Sound Card, Installing Modem, Installing the Motherboard, Installing the Power Supply, Attaching Add-on Cards, Installing the Drives Testing, Parallel and Serial Port Connection, Front Panel Indicators and Speakers,

Unit IV
Printer Features, Printer Performance, Print Quality, Print Speed, Printer Types, Fruiter Working, Installation of Printer Driver, Cleaning a Printer, Common Printer Problems.
Formatting: Formatting PC, Backup of Data Before Formatting, System Restore, Precautions for Formatting, Role of Technician
Trouble Shooting: Introduction-Types of PC Faults-Solid Faults-Intermittent Faults-Developing Strategy. Diagnostic and Repair Tools - Diagnostic Software Tools- Diagnostic Hardware Tools, Advanced Testing Tools-Hand Tools for Service Engineers-Disassembling PC. Troubleshooting Display Problems, Memory Troubleshooting, Power Supply Testing and Problems Troubleshooting. Cleaning and Trouble Shooting of Keyboards, Mouse, Front Panel Indicators and Speakers Troubleshooting.

Books :
1. Fundamentals of Computers - Raja Raman (Prentice Hall of India), ISBN 81-203-2581-8

2. Basics of Computer Hardware - BPB Publication

3. Troubleshooting Your PCs for Dummies 3rd Edition – Dan Gookin, Willey Publishing Inc. ISBN : 9780470230770

**DHNT
Practical I
(DHNT6)**

Practical - I based on IT
Information and CommunicationTechnology

1) Study of various input devices with troubleshooting.
   a. To study and installation of keyboard.
   b. To study and installation of mouse.
2) Study of various output devices.
   a. To study the installation of printer.
3) To study the installation of multimedia.
4) Study of different operating system.
5) Study of booting process.
6) To study assembling and deassembling the PC.
7) To study and installation of antivirus software
8) Things to know while purchasing the computer.

Windows and Internet
1) Create personal E-Mail ID and send a successful message of creation to your lab incharge/HOD.
2) Set your E-Mail Settings like appearance, vacation, signature etc.
3) Change your E-Mail Id Password
4) Write a procedure to search the information and note down the differences between simple search, exact search, multiple search,
5) Procedure to download the information of required contents.
6) Write a procedure to Upload the file.

DHNT
Practical I
(DHNT7)

BASIC ELECTRONICS

1) Study of reverse and forward characterssitics of PN Junction Diode.
2) Study of different Number systems and his interconversions.
3) Study of basic Gates (AND, OR , NOT)
4) Study of Universal Gates (NAND , NOR)
5) Study of Derived Gates (Ex-OR , Ex-NOR)
6) Study and Design Basic Gates (AND, OR, NOT) using NAND Gates.
7) Study and Design Basic Gates (AND, OR, NOT) using NOR Gates.
8) Study and Design (Ex-OR , Ex-NOR) using NAND Gates.
9) Study and Design (Ex-OR , Ex-NOR) using NOR Gates.
10) Study and Design NOR Gate using NAND Gates.
11) Study and Design NAND Gate using NOR Gates.

Practical list of PC-Maintenance

1. How To Install Memory (Ram)
2. How To Install Monitors & Resolution
3. How To Install Graphics Cards .
4. How To Perform Adjusting Display Setting in Windows

5. How To Perform Installing Video Card.
6. How To Providing Power To the Motherboard .
7. How To Perform Installing CD-ROM Drive , Keyboard & Mouse , Sound Card
8. How To Perform Installing Modem
9. How To Perform Installing Mother Board
10. How To Test Various Hardware Drivers.
11. How To Perform Installing Parallel And Serial Port Connection.
12. How To Perform Installing Front Penal Indicators And Speakers

13. How To Perform Installing Various Types of Printers
14. How To Perform Formatting PC.
15. How To Perform Installing Operating System in PC.
16. How To Perform Transfer Data From One Hard disk To Another Hard disk

17. How To Identify Faults For Using Trouble Shooting
18. How To Identify To Common Printer Problem.
19. Troubleshooting following,

    a. Computer System Given Continues Beep, Rectify the Problem And Suggest the

    Solution?

b. How To Identiyf/Solve Problem Insert System Disk And Press Enter Error Message

c. When I Switch on the Computer it Gives Error Message **"Disk Boot Failure"**, Trouble Shoot the Problem And Suggest the Corrective Measure.

d. During Booting Process, Machine Shows a Warning Message For Cpu Fan, Solve the Problem.

e. When I Switch on the Computer Monitor Displays Nothing Only Its Led is Continuously Blinking, Trouble Shoots the Problem?

f. Machines Restart Continuously, Rectify the Problem?

g. Audio is Not Available in the System, Solve the Problem?