

DIGICOM COMPUTER EDUCATION

Module 1: Computer Fundamentals

- Introduction to computers
- Types and generations of computers
- Hardware and software concepts
- Functional units of a computer
- Number systems and binary concepts
- Input and output devices

Module 2: Basic Electronics

- Electrical safety practices
- Basic electrical concepts
- Electronic components (Resistors, Capacitors, Diodes, Transistors)
- Integrated Circuits (ICs)
- Soldering and desoldering
- Measuring instruments and testing tools

Module 3: Computer Hardware Components

- Motherboard architecture
- CPU and processors
- RAM and ROM
- BIOS/UEFI and CMOS
- SMPS (Power Supply)
- Hard Disk Drives (HDD)
- Solid State Drives (SSD)
- Optical drives
- Expansion cards
- Ports and connectors
- Peripheral devices

Module 4: PC Assembly and Maintenance

- Identifying hardware components
- Computer assembly and disassembly
- Installing RAM, CPU, storage devices
- BIOS configuration
- Boot sequence
- Preventive maintenance
- ESD precautions
- Cleaning and servicing computers

Module 5: Operating Systems

- Windows installation
- Linux installation
- Device drivers

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- User management
- Disk partitioning
- File systems
- Software installation
- System updates
- Backup and recovery

Module 6: Computer Troubleshooting

- POST errors
- Boot failures
- Blue Screen (BSOD)
- RAM troubleshooting
- Hard disk failures
- Power supply problems
- Overheating issues
- Driver conflicts
- Printer troubleshooting
- Laptop troubleshooting
- Malware and virus removal

Module 7: Data Storage

- HDD vs SSD
- External storage devices
- RAID basics
- Disk partitioning
- Formatting drives
- Backup strategies
- Data recovery concepts

Module 8: Networking Fundamentals

- Introduction to computer networks
- LAN, MAN, WAN, PAN
- Network topologies
- Client-server architecture
- Peer-to-peer networking
- OSI Reference Model
- TCP/IP Model
- Network protocols
- MAC and IP addressing

Module 9: Network Devices

- Hub
- Switch
- Router

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Modem

Wireless Access Point

Bridge

Gateway

Repeater

Firewall

Network Interface Card (NIC)

Module 10: Network Cabling

Twisted Pair (UTP/STP)

Coaxial cable

Fiber optic cable

RJ-45 connectors

T568A and T568B standards

Cable crimping

Cable testing

Structured cabling

Module 11: IP Addressing and Network Configuration

IPv4 addressing

IPv6 basics

Static IP configuration

Dynamic IP (DHCP)

Subnet masks

Default gateway

DNS configuration

Network sharing

File and printer sharing

Module 12: Network Utilities

Ping

IPCONFIG

TRACERT

- NETSTAT
- NSLOOKUP
- PATHPING
- ARP
- IPCONFIG release and renew

Module 13: Wireless Networking

- Wi-Fi standards

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- Wireless routers
- SSID configuration
- Wireless security
- WPA/WPA2/WPA3
- Troubleshooting wireless networks

Module 14: Windows Server Basics

- Introduction to Windows Server
- Active Directory
- Domain Controller
- DNS Server
- DHCP Server
- Group Policy
- File Server
- User and Group Management

Module 15: Linux Administration

- Linux installation
- Linux file system
- Shell commands
- User management
- File permissions
- Package management
- Basic networking commands

Module 16: Routing and Switching

- Introduction to routers and switches
- VLAN concepts
- Static routing
- Dynamic routing basics
- NAT
- Switching concepts
- Cisco IOS basics

Module 17: Network Security

- Authentication and authorization
- Firewalls
- Antivirus software
- Malware protection
- VPN basics
- Password policies
- Encryption fundamentals
- Backup security
- Basic cybersecurity concepts

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Module 18: Virtualization

Virtualization concepts
VMware Workstation
Oracle VirtualBox
Creating virtual machines
Virtual networking
Snapshots
Resource allocation

Module 19: Cloud Computing Basics

Cloud computing concepts
IaaS
PaaS
SaaS
Cloud storage
Virtual servers
Cloud security fundamentals

Module 20: IT Support and Maintenance

Troubleshooting methodology
Help desk procedures
Remote support tools
Documentation

- Preventive maintenance
- Annual Maintenance Contracts (AMC)
- Customer support skills

Module 21: Emerging Technologies

- Internet of Things (IoT)
- Software Defined Networking (SDN)
- Network monitoring tools
- Cloud networking
- Introduction to automation

Module 22: Project Work

- Assemble a complete desktop computer
- Install Windows and Linux operating systems
- Configure a wired LAN

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Configure a wireless network

Set up file and printer sharing

Perform network troubleshooting

Document the complete network setup

Final hardware and networking project demonstrating installation, configuration, maintenance, and troubleshooting skills.