Semester-I
Computer Applications-I
(Fundamentals of Computers)

Course Objective

To introduce basic concepts of computers, windows operating system and computer networks.

Unit-I

Introduction to Computer Fundamentals: Introduction to Computer, Components of Computer, Generations of Computers, Applications of Computers, Types of Computers, Input and Output Devices, Concept of Hardware & Software, Types of Software, Introduction to Free and Open Source Software. Definition of Computer Virus, Types of Viruses, Use of Antivirus Software.

Unit-II

Storage devices: Semiconductor Memory and its types – Primary and Secondary memory, Registers, RAM, DRAM, SRAM, ROM, PROM, EPROM, EEPROM, CACHE Memory, Secondary Memory, Magnetic tape, Magnetic disk, Compact disk.
Number System: Decimal, binary, octal, hexadecimal, Conversion between different number systems.

Unit-III

Basics of Operating System: Definition, types and functions, Introduction to Windows and Linux Operating system, working with Windows Operating System: User Interface (Task Bar, Icons, Menus, Running Applications), Windows Explorer, File and Folder Operations, Search, Recycle Bin, Configuring the Screen, Adding or Removing New Programs using Control Panel, setting date and time, Applications in Windows (Paint, Notepad, WordPad, Calculator), Using help and creating short cuts.

Unit-IV

Introduction to Data Communication and Computer Networks: Introduction Analog and Digital Communication; Computer Network: Definition, Features & Advantages; Parallel and Serial Transmission; Communication Modes: simplex, half-duplex, full-duplex, Transmission Media: Twisted pair cables, Co-axial cables, Fiber optic cables & Wireless media; Types of Network: Client-Server & Peer to Peer Networks; Classification of Network: LAN, WAN, MAN; Network Topologies: Bus, Star, Ring and Mesh.

References:

1. **P.K. Sinha and P. Sinha**, "Foundations of Computing", BPB publication.
2. **V. Rajaraman**, "Fundamentals of Computers", 5th edition, PHI.
3. **R.K. Taxali**, "PC Software for Windows" TMH.
4. **A. Goel**, "Computer Fundamentals", Pearson Education.

Practical: The practical assignment is based on Unit III.