

# Computer Fundamentals

## Course Objectives:

- Introduce number systems and data representation
- Understand functional units and components of computer
- Introduce the emerging technologies

## Learning Outcomes:

Upon completion of this course, students will be able to:

- Understand the basic organization of a computer and the number system
- Learn about the working of commonly used input-output and memory devices
- Understand the role of Operating system and Computer Networks
- Know about some of the emerging computing technologies and web services

## UNIT-1:

Computer Basics: Simple Model of a Computer, Characteristics of Computers, Hardware and Software, working of a Computer, Stored Program Concept, Problem Solving with computer: Flowchart, Algorithms, Programming,

Computer Software: Introduction to computer software, classification of computer software, system software, application software, firmware, middleware

## UNIT-2:

Input/output Units: Input devices, Output devices, Computer Memory: Introduction, Read Only Memory, Serial Access Memory, Cache memory, primary memory, secondary storage devices, magnetic tapes, hard disks, SSD, optical drives, USB flash drivers, Memory cards, Mass storage devices, Memory Hierarchy.

## UNIT-3:

Operating Systems: Definition, Batch Operating System, Multiprogramming Operating System, Time Sharing Operating System, Multiprocessing Operating System. Services of OS.

Computer Networks: Concepts of Networking-LAN, WAN, MAN, Network topologies. Internet and the World Wide Web.

## UNIT-4:

**Emerging Computing Environments:** Peer to Peer Computing, Grid computing, distributed computing, Cloud Computing: Introduction, cloud services, cloud deployment models.

Email, video conferencing, e-Learning, e-Banking, UPI, e-commerce, e-Governance, social networking, emerging computer applications.

## Text Book:

- ✓ *Fundamentals of Computers by V Rajaraman 6th edition PHI Learning Private Limited*

**Reference Books:**

- ✓ *A First Course in Computers by Sanjay Saxena, Vikas Publishing House.*
- ✓ *Computer Fundamentals by Anita Goel, Pearson pub*