

SYLLABUS

FIRST SEMESTER

BCA- S101: Introduction to Information Technology

UNIT-I

Computer Basics: Algorithms, A Simple Model of a Computer, Characteristics of Computers, Problem-solving Using Computers.

Data Representation: Representation of Characters in computers, Representation of Integers, Representation of Fractions, Hexadecimal Representation of Numbers, Decimal to Binary Conversion, Error-detecting codes.

Input & Output Devices: Description of Computer Input Units, Other Input Methods, Computer Output Units (Printers, Plotters)

UNIT-II

Computer Memory: Memory Cell, Memory Organization, Read Only Memory, Serial Access Memory, Physical Devices Used to Construct Memories, Magnetic Hard Disk, floppy Disk Drives, Compact Disk Read Only Memory, Magnetic Tape Drives.
Processor: Structure of Instructions, Description of a Processor, Machine Language and Instruction set. Processors used in desktops and lap tops.

Specification of a desktop and Lap top computer currently available in the market (Specifications of processor, motherboard & chipset, memory, interface & capacity of hard disk & DVD drives, I/O ports)

UNIT-III

Computer Architecture: Interconnection of Units, Processor to Memory communication, I/O to Processor Communication, Interrupt Structures, Multiprogramming, Processor Features, Reduced Instruction Set Computers (RISC), Virtual Memory.
Software Concepts: Types of Software, Programming Languages, Software (Its Nature & Qualities), Programming Languages.

UNIT-IV

Operating Systems: History and Evolution. Main functions of OS Multitasking, Multiprocessing, Time Sharing, and Real Time OS with Examples

Database Management System: Purpose and Organization of Database, Introduction to Data Models

Computer Generation & Classifications: First Generation of Computers, The Second

Generation, The Third Generation, The Fourth Generation, The Fifth Generation, Moore's Law, Classification of computers, Distributed Computer System, parallel computers.

UNIT- V

Computers & Communications: Introduction to Computer Communications, Introduction to Computer Networks, Types of Networks, OSI/TCP Model, LAN technologies (fast Ethernet & Gigabit Ethernet), How LAN works, Brief survey of active and passive LAN components.

Internet: Network, Client and Servers, Host & Terminals, TCP/IP, World Wide Web, Hypertext, Uniform Resource Locator, Web Browsers, IP Address, Domain Name, Internet Services Providers, Internet Security, Internet Requirements, Web Search Engine, Net Surfing, Internet Services, Case Study, Intranet.

Cyber Laws: Introduction to Cyber Laws, Cyber crime, Cyber contract, Cyber privacy, IT Act

Recommended Books

1. P.K. Sinha, Fundamentals of Computers, BPB Publications
2. I.V. Rajaraman, Fundamentals of Computers, 3rd Edition, PHI Publications