

## FUNDAMENTALS OF INFORMATION TECHNOLOGY

**Credits: 4**

**Semester: I**

**Subject Code: BS22101**

**No. of Lecture Hours: 60**

**Objective:** To understand the application of computers and telecommunications equipment to store, retrieve, transmit and manipulate data in the context of a business or an enterprise.

**Outcomes:** The students would be able to

**CO1:** Understand basic computer terminology and number systems.

**CO2:** Learn about operating systems, and its types.

**CO3:** Learn about the applications of Information technology

**CO4:** Importance of system development and the phases of SDLC

**CO5:** Use of modern means of communications, types of networks and topologies

### UNIT-I

#### Introduction to Computers

**12hrs**

1. Definition - Characteristics and limitations of computers 1
2. Block diagram of a computer, CPU 1
3. Primary and secondary storage 1
4. Input and output devices 1

#### Data Representation and Storage

1. Data representation in computers, bits and bytes 1
2. Number systems (Binary, Octal and Hexadecimal) 1
3. Conversion from decimal to binary, octal, hexadecimal and vice versa 2
4. Secondary storage 1
5. Random Vs Sequential access, Tracks and Sectors 1
6. Storage characteristics 1
7. Increasing data storage capacity through compression (disk compression and file compression) 1

### UNIT-II

#### Operating Systems

**12hrs**

1. Meaning, Definition, Functions 2
2. Types of operating systems: Desktop OS, Server OS, Mainframe OS, Embedded OS 1
3. Multi Tasking and Multi threading 1
4. Multi User Multi processor support 1
5. Miscellaneous tasks 1
6. Batch Processing systems 1
7. Real time systems, Time sharing systems 1

User Interfaces	
1. GUI, Pen based, Touch Screen & Conversational interfaces	2
2. Common Operating Systems: DOS, Windows 95/98 and UNIX	2
<b>UNIT-III</b>	<b>12hrs</b>
<b>Applications of Information Technology</b>	
1. Application programs	2
2. Horizontal Market Applications, Vertical Market Applications	1
3. Customs Applications, Shareware and Public domain software	1
Transaction Processing	
1. Centralized transaction processing	1
2. Client Server software, Distributed computing and Replication	1
3. Information tools for management control: DSS, EIS, GIS, OLAP	2
4. Data Warehousing and Data Mining	1
IT in Business and Industry	
1. Home and at play, Education and Training, Entertainment and Arts	1
2. Science, Engineering and Math, Computers in hiding	1
IT Enabled Services	
3. BPO, KPO & Call centers	1
<b>UNIT-IV</b>	<b>12hrs</b>
<b>Systems Development</b>	
<b>The six phases of Systems Analysis &amp; Design</b>	<b>2</b>
<b>The challenges of Digital Age</b>	
1. Security issues: Threats to Computers & Communications	2
2. Security: Safeguarding Computers & Communications	2
3. Quality of Life Issues	2
4. The ethics of using databases: concerns about accuracy & privacy	2
5. Five generations of programming languages	2
<b>UNIT-V</b>	<b>12hrs</b>
<b>Modern Communications</b>	
1. Communications, FAX	2
2. Voice Mail and Information Services, Email	2
Group Communications	
1. News groups, Mailing lists, IRC, Network games	2
2. Video conferencing	1
3. File exchange, bandwidth	
4. Modem, Network topologies	1
5. Network Types – LAN, MAN and WAN	2
6. Dialup Access	

