



**SARDAR VALLABHBHAI PATEL EDUCATION SOCIETY'S**  
**R. N. G. PATEL INSTITUTE OF TECHNOLOGY - RNGPIT**

An Autonomous Institute u/s UGC Act 1956

Approved by AICTE & affiliated to Gujarat Technological University

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**Program Name: Int. M.Sc. (I.T.)**

**Level: Post Graduate**

**Branch: Information Technology**

**Subject Code: 1BS103**

**Subject Name: Fundamentals of Computer**

w. e. f. Academic Year:	2025-26
Semester:	01
Category of the Course:	Minor Course

<b>Prerequisite:</b>	<b>NIL</b>
<b>Rationale:</b>	This course covers basic understanding of computer fundamentals, hardware components, and operating systems.

**Course Outcome:**

After Completion of the Course, Student will able to:

No	Course Outcomes
01	Describe about computer components, types, software, and their real-life uses.
02	Utilize the major hardware components of a computer system and their functions.
03	Explore number systems, codes, and conversion techniques.
04	Manage various software and operating systems, and their roles.
05	Acquire knowledge of file systems.
06	Implement Linux commands to perform various tasks efficiently.

**Teaching and Examination Scheme:**

Teaching Scheme (in Hours)			Total Credits L+T+ (PR/2)	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Tutorial / Practical		
				SEE (TH)	IAT	CCE	SEE (P)	
4	0	0	4	70	30	-	-	100

Where SEE: Semester End Examination, IAT: Internal Assessment Test, CCE: Continuous and Comprehensive Evaluation

**Course Content:**

Unit No.	Content	No. of Hours	% of Weightage
1.	<b>UNIT 1: Introduction to Computers</b> 1.1 Introduction to Computer 1.2 Components of Computer 1.3 Advantages and Disadvantages of Computer 1.4 Computer Software 1.5 Types of Computers 1.5.1 Personal Computers 1.5.2 Mobile Computers 1.5.3 Servers 1.5.4 Main Frame 1.5.5 Supercomputers 1.6 Applications of Computer in real world	7	15

2.	<b>UNIT 2: Hardware Components of Computer</b> 2.1 Components of Computer 2.1.1 Block Diagram of Computer 2.1.2 The System Unit 2.1.3 Processor 2.1.4 Motherboard 2.1.5 Memory - Register, RAM, ROM 2.1.6 Expansion Slots and Adaptor Cards 2.1.7 Ports Connectors 2.1.8 Storage Systems 2.1.9 BIOS	7	15
3.	<b>UNIT 3: Computer Codes and conversions</b> 3.1 Introduction to Number System 3.2 Types of Number System 3.2.1 Decimal System 3.2.2 Binary System 3.2.3 Hexadecimal System 3.2.4 Octal System 3.2.5 4-bit BCD System 3.2.6 8-bit BCD System 3.2.7 ASCII Code 3.3 Conversion Between Number Systems	9	20
4.	<b>UNIT 4: Introduction to Operating Systems</b> 4.1 Introduction to Operating Systems 4.2 Booting Process of Computer 4.3 Functions of OS and Need for OS 4.4 Types of OS 4.4.1 Single User & Multi User 4.4.2 Single tasking & Multi-tasking 4.4.3 Uni-Processor & Multi-Processor 4.4.4 Batch Processing 4.4.5 Time-Sharing 4.4.6 Distributed 4.4.7 Mobile 4.4.8 Real-Time	7	15
5.	<b>UNIT 5: File Systems</b> 5.1 Types of File System (FAT, NTFS) 5.2 Disk Management 5.3 Disk Scheduling Algorithm	7	15

6.	<b>UNIT 6: Introduction to Linux</b> 6.1 Installation and Configuration of Linux 6.2 Feathers and component of Linux 6.3 Comparison of Windows and Linux 6.4 Basic Commands (cat, cmp, wc, sort, mkdir, rmdir, cd, ls, ps, man, cal, df, cp, mc, pwd, passwd, who, whoami, chmod, date, sudo(Super User), apt-get, install, update, upgrade)	9	20
	<b>Total</b>	<b>46</b>	<b>100</b>

**Suggested Specification Table with Marks (Theory):**

Distribution of Theory Marks (%)					
R Level	U Level	A Level	N Level	E Level	C Level
40	40	20	-	-	-

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)

**References/Suggested Learning Resources:****(a) Books:**

1. Fundamentals of Computer by E Balagurusamy - McGraw-Hill
2. Computer Fundamentals by P.K.Sinha, BPB Publications
3. Computer Fundamentals : Anita Goel - Pearson.
4. Fundamentals of Computers by V. Rajaram, PHI Learning
5. Introduction to Computers by Peter Norton, McGraw-Hill Education

**(b) Open source software and website:**

1. <https://www.learncomputerscienceonline.com>
2. <https://www.w3schools.in/operating-system>

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