SARDAR VALLABHBHAI PATEL EDUCATION SOCIETY'S
R. N. G. PATEL INSTITUTE OF TECHNOLOGY - RNGPIT
An Autonomous Institute u/s UGC Act 1956
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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:	2024-25
Semester:	01
Category of the Course:	Minor Course

Prerequisite:	**NIL**
Rationale:	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	Understand the fundamental concepts of Computers.
02	Understand different hardware components of a computer system.
03	Understand and Analyse different number systems.
04	Understand the functions of an operating system.
05	Understand and Apply the concept of Linux & its commands.

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.	**UNIT 1: Introduction to Computers** 1.1 Computer 1.2 Introduction to Computer 1.3 The Components of Computer 1.4 Advantages and Disadvantages of Computer 1.5 Computer Software 1.6 Categories of Computers Personal Computers, Mobile Computers, Servers, Main Frame, Supercomputers 1.7 Usage and Applications of Computer in Society	7	15
2.	**UNIT 2: Hardware Components of Computer** 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.	**UNIT 3: Computer Codes and Conversions** 3.1 Introduction to Number System 3.2 Introduction to Number System 3.3 Types of Number System 3.3.1 Decimal System 3.3.2 Binary System 3.3.3 Hexadecimal System 3.3.4 Octal System 3.3.5 4-bit BCD System 3.3.6 8-bit BCD System 3.3.7 ASCII Code 3.3.8 Conversion of Numbers (From one Number System to another)	10	25
4.	**UNIT 4: Operating System and Usage** 4.1 Types of OS Single User, Multi-User, Uni-Processor, Multi-Processor, Batch Processing, Time-Sharing, Real Time 4.2 Booting Process of Computer 4.3 Types of File System - FAT, NTFS 4.4 Partition of Disk 4.5 Installation of Linux, Functions of OS, Need of OS	10	25
5.	**UNIT 5: Introduction to Open Source OS: Linux** 5.1 Features and Components of Linux 5.2 Installation and Configuration Open Source Software 5.3 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.	8	20
	Total	**42**	**100**

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