

Madhya Pradesh Bhoj (Open) University

Bachelor of Science (Information Technology)

Syllabus

BIT-01: Information Technology

UNIT-1

Data and Information Concepts : Need for Information, Characteristics of Information, Value of Information, Law of Requisite Variety, Characteristics of an Information System, Categories of Information, Information for Planning, Use of Information Sources, Levels of Information, **Elements of Electronic Data Processing:** Data Concepts, Organization of Data as File, File Organization, Data Types, Transition to EDP, Features of Electronic Data Processing Systems, Data Processing Types of Processing, Overview of Commercial Applications Transaction, Processing Real Time Processing, Word/Text Processing Applications of Text Processing DTP, Computer Graphics, Office Automation, EFT and E-COM, **Number System and Logic Gates :** Need for a Different Number System in the Computer Different Number Systems Memory Addressing Representation of Characters in Computers Representation of Numbers in Computers Data Representation in Hexadecimal and Octal Systems Binary Arithmetic Conversion from Decimal Number System to Other Number System Conversion from Other Number System to Decimal Number System Signed Magnitude System Logic Gates Universal Gate Half Adders and Full Adders Full Adder

UNIT-II

ELEMENTS OF COMPUTER HARDWARE Evolution of Computers : Definition of Computer Generations of Computers Classification of Computers Classification of Digital Computers. **Hardware Concepts :** Definition of Hardware, Hardware Components, Registers, Instruction Cycle, Branch Instruction, Memory, Other Types of Memory, CISC and RISC. **Peripheral Devices :** Peripheral Devices, Input Devices, Output Devices, Hard, Copy Output Devices, **Secondary Storage Devices :** Need of Secondary Storage Devices, Types of Storage Devices, Magnetic Tape Systems, Magnetic Disk, CD-ROM

UNIT-III

ELEMENTS OF COMPUTER SOFTWARE, Software Concepts : Components of Computers, System Software, Application Software, Software Licensing, Utility Software. **Classification of Programming Languages :** Computer Programming Languages, Generations of Programming Languages, Classification of Programming Languages, Translator, Linker/Loader, Subroutines, Library Functions, Program and Programming, Fourth Generation Languages (4GLs), Database Engines, Relational Database Management System (RDBMS), Concepts of Front-end Tools, Network Programming Languages, Hypertext Mark-up Language (HTML), Java as Platform Independent Language, Visual Languages,

UNIT-IV

OPERATING SYSTEM, Operating System: Concepts : Introduction to System Software, Operating System (OS), Need and Usage, Evolution of Operating Systems, Different Types of Operating System, Functions of an Operating System, Operating System as a Process Manager, Memory Management Functions, Device Management Functions, Information Management Functions, **Introduction to DOS** : Introduction to DOS, Structure of MS-DOS, MS-DOS Booting Process, File Naming Rules, System Files, Commands of DOS, The WildCard (?, *) Characters, DOS Directory structure, Some Directory Commands, External Commands of DOS, More External Commands, Batch Files, Security and Recovery of Data, **Graphical User Interface and Windows'98** : User Interface, Graphical User Interface, Mouse Functions, Important Terms, Windows, Components of Windows, Special Indicators in Menu/Dialog Boxes, Comparison of GUI and CUI, Windows'98. **Unix** : Overview of Unix, Concepts of Shell and Kernel, Unix System Architecture, Booting Sequence, Login and Logout Process, Basic Commands of Unix, File Security, File Access Permissions, Editors of Unix, Creation of User. **Windows NT** : Overview of Windows NT, Multithreading, Booting Sequence, Booting Another Operating System, Login and Logoff Process, Concept of Client-Server Architecture, Windows NT Server, Introduction to Administrative Tools, NT Server Domains, Creating a User.

UNIT-V

COMPUTERS AND COMMUNICATION. Communication Concepts : Data Communication, Data Transmission, Types of Transmission, Transmission Techniques, Transmission Modes, Types of Transmission Systems, Multiplexing, **Networking Concepts**, Definition of Network, Advantages of Network Applications, Network Topologies, Types of Networks, Homogeneous and Heterogeneous Networks, Examples of Networks, ISO-OSI Reference Model, Network Protocols, Networking Devices, Distributed Data Processing, Global Information Infrastructure (GII), National Information Infrastructure (NII), Network Management Tasks, Security of Network, **Internet Technology** : Definition of Internet, Services of Internet, Advantages and Disadvantages of Internet, Elements of WWW, Web Pages, Tele Conferencing, Video Conferencing, **PRINCIPLES OF DATA SECURITY. Security, Maintenance and Troubleshooting** : Security, Types of Security, Maintenance, Perverse Software, Computer Viruses, Preventive Measures and Treatment, Virus Scanners, **IT APPLICATIONS. Some Important IT Applications** : Business Data Processing, Financial Information System, Medical Applications, Scientific Applications, Educational Applications, Entertainment Applications, Multilingual Applications. **Some Important National Projects** : Introduction, Railway Reservation System, Nicnet, ERNET, Indonet, PARAM, Smart City Concept, National Internet Backbone (NIB).

BIT-02: Computer Tools and Architecture

UNIT-I

Data, Information and Information System : Data, Information, Information System.
Basic Components of Computer: Components of Computer, Motherboard, Input Devices, Output Devices, Storage Devices, Cards, Ports and Cords, Power Supply.
Classification of Computers, Classification according to Purpose, Classification according to Components, Classification according to Size.
Computer Architecture: With Special Reference to PC: CPU Organization, Execution Unit and Bus Interface Unit, Internal Memory, Segments and Addressing, Registers.
Data Presentations and Digital Logic Circuits : Number Systems, Decimal Representation, Alphanumeric Representation, Digital Logic Circuits, Boolean Algebra.

UNIT-II

Flip-Flops, Counters, Registers and Sequential Circuits, Flip-Flops, Sequential Circuits, Registers, Counters, **Register Transfer and Microoperations** : Register Transfer, Bus System, Microoperations. **Basic Computer Organization and Design** : Instruction Code, Stored Program Organization, Computer Registers, Computer Instructions, Timing, Instruction Cycle, Input, Output and Interrupt. **Programming the Basic Computer** : Computer Instructions, Machine Language, Assembly Language, The Assembler, **Microprogrammed Control,** Microprogrammed Control, Conditional Branching, Mapping of Instruction.

UNIT-III

Central Processing Unit : General Register Organization, Stack Organization, Instruction Formats, Addressing Modes, Data Transfer and Manipulation, Program Control, RISC and CISC Computer. **Pipeline and Vector Processing** : Pipeline Processing, Vector Processing, Array Processing. **I/O Peripherals** : Input/Output Devices and Peripherals, Input/Output Interface, Input/Output Module. **Memory Organization and Types of Memory** : Memory Organization, Main Memory Auxiliary Memory, Cache Memory, Associative Memory, Virtual Memory. **Computer Arithmetic,** Addition and Subtraction, Multiplication Algorithms, Division Algorithms,

UNIT-IV

Operating Systems : Input/Output (I/O) Programming, Interrupt Structure and Processing, Memory Management, Process Management, Device Management Techniques, **Application Software** : Application Programs, General Purpose Application Packages, Spreadsheets, DBMS, DTP, **Programming Languages, Classification and Types** : Machine Language, Assembly Language, High Level Language, Fourth Generation Languages, Graphical User Interface, **System Software,** Assembler, Macro Language and Macro Processor, Loaders and Linkage Editors, Compilers, Programming Language Grammar, Utilities Program. **Word Processing, Spreadsheets and Databases** : Word Processing, Spreadsheets, Database.

UNIT-V

Physical Security and Password Management : Physical Security, Password Management, Remote Sessions and Single-Logon, Logon and Password management, Access Control List, Central Administration and Roles, Remote Access Service and Point-to-point Tunneling Protocol, Basic Protocol Security. **Virus, Bombs and Worms :** Virus, Spreading of Virus, New Technology and Viruses, Viruses in Windows95 and other 32 Bit Environment, Detecting a Virus in MS-DOS Mode, Methods to Detect a Boot Sector Virus. **Encryption And Decryption :** Substitution Ciphers, Transposition Ciphers, Data Encryption Standard, Key Protection, Authentication and Digital Signatures.

BIT-03: Discrete Mathematics

UNIT-I

Arithmetic Progression, Sequence, Series, Arithmetic Progression, The General Term or Nth Term of an AP., The Sum of n terms of an AP., Arithmetic Mean, AM. of two Given Numbers, Insertion of N AM. Between Two Given Numbers Properties of A P. **Geometric Progression**, Definition, The Nth Term of G.P., The Sum of N Terms of a G.P., The Sum of an Infinite G.P., Recurring Decimal an Infinite G.P., Geometric Means, Geometric Mean of Two Given Numbers A And B Insertion of N Geometric Means Between Two Quantities Properties of G.P., To Find the Sum of N Terms of the Series, **Harmonic Progression**, Definition, Harmonic Mean (H.M) of Two Given Numbers Relation between AM., G.M. and H.M,

UNIT-II

Miscellaneous Series, Arithmetic - Geometric Series, The Sum of n Terms of the Arithmetic - Geometric Series Sigma CE) Notation, Sum of first N Natural Numbers, The Sum of the Squares of First n Natural Numbers The Sum of the Cubes of th First n Natural Numbers Method of Difference, **Set Theory**, The Concept of a Set, Notations, Representation of a Set, Types of Sets, Theorem on Subsets, Number of Subsets of a Set, Venn Diagram, Set Operations, Laws of Union of sets, Laws of Intersection of Sets, Law of Complement of a Set, Theorem (on Symmetric Difference) De-Morgan's Laws, Applications of Venn Diagrams

UNIT-III

Ordered Pairs, Relations & Functions Ordered Pairs, Equality of Ordered Pairs, Cartesian Product of Sets, Theorems on Cartesian Products' Relation, Domain and Range of a Relation, Inverse Relation, The Inverse of an Inverse Relation, *Binary* (or Dyadic) relations , Type of Relations, Equivalence Relations, Equivalence Class, Properties of Equivalence Classes Composition of Two Relations, Partition of a Set, Partial Order, Theorem, Functions (Mapping), Types of Mapping, Other Specific Mappings, Types of Binary Operations, Algebraic Structure, Graph of a Function, Real Valued Map., Product of 'Functions, Method of Construction of Operation Table Countable and-Uncountable Sets, **Group Theory**, Introduction-Algebraic Structures, Groups: Definition, Abelian Group, Order of a Group, Semi-group, Some General Properties of Groups, Some Important Theorems on Groups, Theorem on Subgroups, Homomorphism (Definition), Isomorphism (Definition), Theorems on Homomorphism, Definition (Kernel of f), Theorems on Homomorphism, Definition (Cyclic Groups), Fundamental Theorem of Homomorphism

UNIT-IV

Rings and Fields, Quotient Spaces, Rings in General, Some Special Classes of Rings, Field and its Axioms, Sub-ring and Sub-fields, **Vector Space**, Definition, Linear Combination, Linear Independence and linear Dependence, Basis of Vector Space, Vector Space of linear Transformation, Linear Algebra, Algebra of Quaternions

UNIT-V

Posets and lattices, Partially Ordered Sets (Posets), Totally Order Set, Diagrammatic Representation of a Poset: (House diagrams) Definitions, Maximal Element, Minimal Element, Duality, Product of Two Posets, lattice, Duality and the Idempotent Law, Semi-lattices, Complete lattices, Sub lattice, Convex Sub lattice, Distributive lattice, Complements, Complemented lattices, **Boolean Algebra & Its Applications** Boolean Expressions and Boolean Functions Identities of Boolean Algebra, Duality, Algebra of Switching Circuits.

BIT-04: PC Software

UNIT-I

Introduction to Computers : Definition, Characteristics, Applications, Historical Evolution, Generations of Computers, Classification, Limitations, Hardware, Software, Liveware, Firmware. **Computer Architecture and Organization:** Computer: The Basic Unit, Input, Process, Output, Bit, Nibble and Byte, Memory Size, Input Devices, Output Devices, Secondary Storage Devices, Networking. **Software and Disk Management :** Role of Software, Disk Organisation. **An Overview of MS-DOS :** Introduction to Operating System, Functions of an Operating System, Types of Operating System, Introduction to MS-DOS, Directory Commands. **File Management in DOS :** Introduction to Files, File Management Commands, General Commands. **Disk Management in DOS :** Disk Management Commands, Utility Commands. **Batch Files and Configuring DOS :** Introduction to Batch Files, Running and Stopping Batch Files, Batch File Commands, Configuring the System, System Configuration Commands.

UNIT-II

An Introduction to Windows 98 : Windows 98, The User Interface, **Windows Accessories:** Window Accessories, Entertainment, FAX, Games, System Tools, Calculator, Notepad, Paint, WordPad, Calendar, Card File. **Miscellaneous Windows Features :** The My Computer Icon, Windows Explorer, Folders, Long Filenames, Shortcuts, Plug and Play, Accessibility, Mobile Computing, Network Neighbourhood, High Performance Multimedia. **Web Features and Browsers:** Web Features, Internet Connection Wizard, Active Desktop, Channels, E-mail, Net meeting, Front Page Express, Web Browsers, ORD 97.

UNIT-III

Word 97–Basics: Introduction to Word Processing, Introduction to Word 97, Creating A Document, Saving A Document, Printing Documents, Exiting Word, Opening a Document, Word's Document Views.

Editing Documents : Typing in a Document, Displaying Nonprinting Characters, Moving Around in a Document, Manipulating Windows, Selecting Text, Editing Text, The Clipboard, Moving and Copying Text, Finding and Replacing Text. **Proofing Documents :** Proofing Documents, Correcting Spelling Errors, Quick Spelling Checking, Using Automatic Spell-Check, Using the Grammar Command, Document Statistics and Readability Estimates, Using the Thesaurus, Using AutoCorrect and AutoText, Using the AutoComplete, Hyphenating Documents. **Document Enhancement:** Character Formatting, Paragraph Formatting, Sections, Columns and Page Formatting, **Mail Merge :** Merging Letter and Address Files, Just What is Merging, Writing Form Letters, Merging Specific Records, Setting the Record Order, Creating Envelopes and Mailing Labels. **Working With Wizards and Templates:** Word's Wizards, Introducing Templates, Handling Graphics. **Working with Tables and Charts:** Word Tables, Creating Simple Tables, Creating Complex Tables, Moving Within a Table, Adding Text to a Table, Selecting Parts of a Table, Modifying the Table Layout, Splitting a Table, Formatting a Table, Sorting Table Data, Numbering Cells in a Table, Calculating in a Table, About Graph. **Creating Basic HTML Documents :**

Creating a Web Page, Converting an Existing Document to HTML, Inserting Hyperlinks, Drag and Drop Hyperlinks, Previewing Web Page, Adding Basic Visual Elements to Web Pages, EXCEL 97.

UNIT-IV

Excel 97 – Basics : Introduction to Excel 97, Starting Excel, Excel's Parts, Moving Around a Worksheet, Using a Mouse, Working with Workbooks, Essential Workbook File Operations, Closing Workbooks, Workspace Files, Types of Worksheet Data, Entering Data into a Cell, Printing Your Work. **Editing and Formatting Worksheets :** Cells and Ranges, Editing Text and Formulas, Copying Cells, Moving a Cell or Range, Erasing the Contents of a Cell, Replacing the Contents of a Cell, Deleting Rows and Columns, Inserting Rows and Columns, Changing Column Widths, Changing Row Heights, The Formatting Toolbar, Using AutoFormats, Using Conditional Formatting, Using Named Styles. **Working with Formulae and Cell Referencing :** Introducing Formulae, Operators in Excel, Excel's Built-in Functions, Using the AutoSum Tool, Entering Formulae, Understanding Cell References, Types of Cell References, Excel Error Values, Circular References, Tips for Working With Formulae, Linking Workbooks. **Working with Names and Functions :** Naming Cells and Ranges: The Basics, Creating Names, Deleting Names, Referencing Named Cells, Pasting Names into Formulas, Applying Names to Existing References, Using Row and Column Headings as "Names", Excel Functions, Function Arguments, Ways to Enter a Function, Excel Function Dictionary. **Working with Charts :** Overview of Charts, Chart Types, Creating Charts, Basic Chart Modifications, Formatting Chart Elements, Working With 3-D Charts, Printing Charts. **Database Management,** What is a List, Filtering a List, Sorting a List, About Subtotals, Understanding Pivot Tables, **What-If Analysis,** Data Tables, Scenario Manager, Solving Simple Problems Using Goal-Seek, Solving Complex Problems With Solver. **Creating and Using Macros :** Introducing Macros, Working With the Macro Recorder, What Tasks can be Automated, Starting to Record a Macro, Recording a Macro: An Example, Absolute vs Relative Recording, Running Macros. **Web Publishing and Data Sharing :** Excel's Internet Tools, Using Excel with Office Applications.

UNIT-V

An Overview of Computer Viruses: Classification of Viruses, Effects of Viruses, Preventive Measures and Treatment, Virus Scanners and Vaccines, Write Protection, Intellectual Property Rights.

BIT-05: Programming Fundamentals

UNIT-I

Introduction To Computer Based Problem : Problem Definition, Problem Solving, Goals and Objectives, Problem Identification and Definition. **Program Design And Implementation Issues** : Programming, Algorithm, System Design Techniques, Programming Techniques, Basic Constructs of Structured Programming, Modular Design of Programs, Communication between Modules, Module Design Requirements.

Unit – II

Programming Environment : Turbo C++ IDE, Visual C++ IDE, Status bar, Visual Basic IDE, Working with VB Forms. **Program Development** : Steps in Programming, Design a program model, Determine correctness of algorithm, Code Program, Test and debug the Program, Documentation.

Unit – III

Programming Languages : Types of Programming Languages, Generations of Programming Languages, Machine Level Language (1940–1950), Assembly Language (1950–1958), Assembler, High Level Language (1958 Onwards), Compiler, Interpreter, Popular High level Programming Languages, Forth Generation Programming Language (4GLs): (1985 Onwards), Application Program Generators (APGs).

Unit – IV

Programming Aids and Techniques : Program Flowcharts, Pseudocodes, Decision Tables, Programming Techniques.

Unit – V

Program Maintenance : Desirable Programme Concepts, Software Maintenance, Categories of Maintenance, Maintenance Characteristic, Maintenance Tasks, Maintenance Side, Effects Maintaining “Alien Code”.

BIT-06: Programming in C

UNIT-I

Introduction to Computer Based Problem Solving: Problem Definition, Problem Solving, Goals and Objectives, Problem Identification and Definition, program **Design and Implementation Issues:** Programming, Algorithm, System Design Techniques, Programming Techniques, Basic Constructs of Structured Programming, Modular Design of Programs, Communication between Modules. Module Design Requirements.

Programming Environment: Computer Programming Languages, Types of Programming Languages, Generations of Programming Languages, Machine Level Language (1940-1950), Assembly Language (1950-1958), Assembler, High Level Languages (1958 Onwards), Compiler, Interpreter, Popular High Level Programming Languages, Forth Generation Programming Languages (4GLs): (1985 Onwards), Application Program Generators (APGs).

UNIT-II

Overview Of C Language: History of C Language, Feature of C Language, Why is C Language Popular? , Using Borland C on DOS Platform, Using Borland C on Unix Platform, A Sample C Language Program.

Data Types, Variables and Constants: Data Types, Variables, Constants.

Operators, Type Modifiers and Expressions: Operators, Type Modifiers, Expressions, Type Definitions Using typedef.

Basic Input/Output: Introduction to Input/Output, Console I/O Functions, Unformatted Console I/O Functions.

UNIT-III

Control Constructs: Control Statements, Conditional Statements, Loops in C, The Break Statement, The Continue Statement, The Exit() Function, The goto Statement.

Arrays: Introduction to Arrays, One Dimensional Array, Strings, Two Dimensional Array, Multidimensional Array.

Functions: Introduction to Functions, Function Declaration and Prototypes, Function Definition, Storage Classes, Scope and Lifetime of Declaration, Passing Parameters to Functions, Command Line Arguments, Recursion in Function.

UNIT-IV

Pointers: Introduction to Pointers, Pointers Notation, Pointer Notation and declaration and Initialization, Accessing Variable through Pointer, Pointer Expressions, Pointers and One Dimensional Arrays, Malloc Library Function, Calloc Library function, Pointers and Multidimensional Arrays, Arrays of Pointers, Pointer to Pointers, Pointers and Functions, Functions with a Variable Number of Argument.

Structures: Structure Definition, Giving Values to Members, Structure Initialization, Comparison of Structure Variables, Array of structures, Array within Structures, Structures within Structures, Passing Structures to functions, Structure Pointers.

Unions: Union Definition and Declaration, Accessing a union Member, Union of Structures, Initialization of a Union Variable, Uses of Union, Use of User Defined Type Declarations.

Linked List: Dynamic Memory Allocation, Linked List, Basic List Operations.

UNIT-V

File Handling In C: what is a File? , Defining and Opening a File, Closing a File, Input/Output Operations on Files, Functions for Random Access to Files, Example Programs.

C Preprocessor: Introduction to Preprocessor, Macro Substitution (#define), Undefined a Macro (#undef), File Inclusion, Conditional Compilation Directives (#if, #else, #elif, #endif, #ifdef, #ifndef).

BIT-07- System Analysis And Design

UNIT-I

System Analysis and Design : What is System Analysis and Design (SAD), What Does it Take to do System Analysis?, The Role of a System Analyst, Change in System Analyst's Responsibilities, Responsibilities of System Analysts, **System Development Life Cycle:** System Development Life Cycle (SDLC), Waterfall Model for System Development, Prototyping, The Spiral Model, Problem Identification – Preliminary Investigation

UNIT-II

Feasibility Study : Objective of the Feasibility Study, Types of Feasibility, Steps in Feasibility Study, Cost/Benefit Analysis, **System Analysis :** Need of Analysis, Determination of Requirements, Need of Documenting the Existing System, Fact Finding Techniques **Documentation Tools and Techniques :** Documenting the Existing System, Organization Chart, Decision Tree, Decision Table, Structured English, System Flow Chart, HIPO Chart, Warnier/Orr Diagram, Structure Chart, Programme Flow Chart, Data Flow Diagrams (DFD), Data Dictionary, Entity Relationship Diagram

UNIT-III

System Design : System Design Concept, Logical and Physical Design, Logical and Physical DFDs, System Specifications. **Output Design :** Objective of Output, Types of Output, Key Output Questions, Formats of Outputs, Designing Printed Output, Turnaround Documents, Layout of a Printed Report, Guidelines for Designing Printed Output, Designing Visual Display Output. **Input Design :** Objective of Input Design, Capturing Data for Input, Design of the Source Document, Methods for Data Capture, Input Validation.

UNIT-IV

Modular Design and Database Organization : Modular Design, Principles that Guide Software Design, Top-Down Structure of Modules, Bottom-up Structure, File Structure, File Organization, Database and Its Objectives, Normalization. **Quality Assurance, Testing and Validation :** System Testing Objectives, What Do We Test For, The Nature of Test Data, The Test Plan, Types of System Tests, Quality Assurance.

UNIT-V

Implementation and Maintenance : Conversion, Activity Network for Conversion, File Conversion, User Training, Other Activities in Conversion, System Acceptance and Combating Resistance to Change, Conversion Strategies, Post Implementation Review, Software Maintenance, Type of Software Maintenance. **System Security and Audit :** System Security, Threats to System Security, Risk Analysis, Control Measures, System audit, Protection Against VIRUS.

BIT-08: Operating System

UNIT-I

Operating Systems Overview :Operating Systems as an Extended Machine and Resource Manager, Operating Systems Classification, Operating Systems and System Calls, Operating Systems Architecture. **Process Management Functions** :Process Model, Hierarchies and Implementation, Process States and Transitions, Multitasking, Multiprogramming and Multi-threading, Level of Schedulers and Scheduling Algorithms, Micro-kernel Architecture.

UNIT-II

Memory Management Functions : Memory Management of Single User Operating System, Memory Partition, Memory Swapping, Memory Paging, Memory Segmentation, Virtual Memory. **Device Management Functions** : I/O Device and Controllers, Interrupt Handlers, Device Independent I/O Software, User-space I/O Software, Disk Scheduling, Clock Hardware Software, Terminal Input/Output Software, File Management Functions, File Naming, File Structure, File Types, File Access Method, File Attributes, File Operations, Symbolic Links, File Sharing and Locking, File Protection and Security, Hierarchical Directory Systems, Distributed File Systems.

UNIT-III

Concurrent Programming : Sequential and Concurrent Process, Precedence Graph, Bernsterin's Conditions, Mutual Exclusion Problem, Time-dependency and Critical Code-section, Classical Process Co-ordination Problems, Deadlock Handling, Inter-process Communication.

UNIT-IV

DOS : Directories, Files, Wild Cards, Renaming a File, Deleting a File, Printing on Screen, Redirection Options in DOS, Some Disk Commands, The Config.sys file, The AUTOEXEC.BAT File, Command in DOS. **Windows 98/2000** : Starting Windows 95/98, Moving in Menus, Understanding the Start Menus, Create Pictures Using Paint, Writing Documents Using WordPad, MS-DOS Prompt, Starting Windows2000.

UNIT-V

UNIX: Overview of UNIX Operating System, Implementation of Operating System. **LINUX** : LINUX features, LINUX Shell, Files and Programs, Managing Devices, Windows Vs LINUX, Tailoring the system, Programming in LINUX, C on LINUX.