LESSON PLAN(2023-24) EVEN SEMESTER(Jan-May)

Teacher Name-Dr. Bhawna Kaushik

Class-BCA 2nd Sem

Subject-Logical Organization of Computer II

Month Topics Covered

|  |  |
| --- | --- |
| January | Sequential Logic: Characteristics, Flip-Flops, Clocked RS, D type, JK, T type and MasterSlave flip-flops. State table, state diagram and state equations. Flip-flop excitation table |
| February | Sequential Circuits: Designing registers – Serial Input Serial Output (SISO), Serial Input Parallel Output (SIPO), Parallel Input Serial Output (PISO), Parallel Input Parallel Output (PIPO) and shift registers. Designing counters – Asynchronous and Synchronous Binary Counters, Modulo-N Counters and Up-Down Counters |  |
| March | Memory & I/O Devices: Memory Parameters, Semiconductor RAM, ROM, Magnetic and Optical Storage devices, Flash memory, I/O Devices and their controllers. |  |
| April | Instruction Design & I/O Organization: Machine instruction, Instruction set selection, Instruction cycle, Instruction Format and Addressing Modes. I/O Interface, Interrupt structure, Program-controlled, Interrupt-controlled & DMA transfer, I/O Channels, IOP. |  |

LESSON PLAN(2023-24) EVEN SEMESTER(Jan-May)

Teacher Name-Dr . Bhawna Kaushik

Class-B.COM 2nd sem

Subject- Computer Fundamentals II

Month Topics Covered

|  |  |
| --- | --- |
| January | Fundamental to Computers: Model of a digital Computer; Functioning of a digital Computer; Types of digital Computer; Advantages of a digital Computer; difference between Digital and Analog Computer Arithmetic and number systems, ASCII & EBCDEC character sets. |
| February | Software concepts: Types of Software and their role, Relationship between Hardware and Software, Different system Software Types- Operating Systems, Translators, Systems, Translators, System Utilities – File Manger, Loader, Linker, Editor; Concept of Application Packages: Word- Processing, Spread-sheet Software, Database Software, Graphics Software and Entertainment |  |
| March | Introduction to Windows: Evolution of Windows; Types of windows, Windows as an Operating System, Use of GUI in Window Explorer, Control Panel, Paintbrush Tools; Data Communication: Introduction of Data Communication; Modes of Data Transmission; Forms of Data Transmission, Data Transmission Speed, Communication Channels: Wire-cables, Fibre Optics, Microwave, Communication Satellites. |  |
| April | Computer Networks: Need for Networking; Types of Computer Networks; Difference between LAN and WAN; Hardware of WAN; Internet and its Application: History of Internet, Application of Internet, ISDN Internet in India, Internet Basic Services; MS-Excel: Worksheet Overview: Rows, Columns, Cell, Menus, Creating Worksheet Opening and Saving Worksheets, Formatting, Printing, Table creating and printing graphs |  |

LESSON PLAN(2023-24) EVEN SEMESTER(Jan-May)

Teacher Name-Dr . Bhawna Kaushik

Class-B.COM 2nd sem

Subject- Operating System And Business Data Processing II

Month Topics Covered

|  |  |
| --- | --- |
| January | Data Processing System: Data, Information and Data Processing; Need of Information; Data Storage Hierarchy; File Mgt. System- File Types; File Utilities: file sorting Utility, Searching, Merging, Copying, Printing and Maintenance |
| February | Database Management System: Objectives of a Database System or Advantages of Database System; Components of a Database System; Disadvantages of Database System; Database Administrator (DBA); DBMS and its Functions; Main Components of DBMS-DDL, Query Language and Report Generator; Architecture of DBMS; Data Independence, various keys in DBMS- Primary key, Foreign key, candidate key, alternate key, super key |  |
| March | Database Models: Hierarchical Model Network Model and Relational Model; Creating and Using a Database- Define its Structure, Designing Forms, Entering data |  |
| April | Spreadsheet and its Business applications; features of Spread-Sheet; Creating a Workbook; Saving a Work-sheet, Creating a table and converting in graph, Built-in-functions; Business Application using MS-Access: Concept of Field, Records and files, Creation of Database, Reports; Sorting and Searching records, Designing queries and reports.Basic of data arrangement and access. Traditional file environment, identification of relevant data, evaluation of database technology. Databases: the Modern approach |  |

LESSON PLAN(2023-24) EVEN SEMESTER(Jan-May)

Teacher Name-Dr . Bhawna Kaushik

Class-M.SC (comp. sc,) 2nd sem

Subject- Data Structures using C

Month Topics Covered

|  |  |
| --- | --- |
| January | Programming fundamentals: Algorithm development, Techniques of problem solving, flow-chart, decision table, structured programming concepts; top-down design, development of efficient program; program correctness; debugging and testing of programs, algorithm for searching, sorting (exchange and insertion), Analysis of Algorithm: Frequency count, Time Space tradeoff. |
| February | Programming in C: Introduction to C, Data type, constants and variable; Structure of a C program, Operators and Expressions, Control statements: Sequencing, Alteration and Iteration; Arrays: Representation of single and multidimensional arrays; sparse arrays - lower and upper triangular matrices and Tri-diagonal matrices; String and pointers, Functions, Recursion. |  |
| March | Stacks and Queues: Introduction and Primitive operations on stack; Stack application: Infix, postfix, prefix expressions; Evaluation of postfix expression; Conversion from infix to Postfix; Introduction and Primitive Operation on queues, D-queues and Priority queues, Circular queue. Linked Lists: Introduction to Linked lists; Implementation of linked lists, operations such as traversal, Insertion, deletion, searching, Two way lists. |  |
| April | Trees: Introduction and Terminology; Traversal of binary trees; Recursive algorithms for tree operations such as traversal, insertion, deletion; threaded Binary trees, binary search trees; AVL trees, B tress. File structure: Physical Storage devices and their characteristics, constituents of a file viz. fields, records, fixed and variable length records, primary and secondary keys; file operations, basic file system operations, file organizations: serial sequential, index sequential, direct, inverted, multilist. Sorting Techniques: Bubble Sort, Insertion sort, Selection sort, merge sort, Heap sort, Quick sort. Searching Techniques: Linear search, Binary search, Hashing function and Collision Handling methods. |  |