**Lesson Plan**

**Government College, Mangali**

**Unit wise Lesson Plan for** Even **Semester 2023-24**

**Department: Computer Science**

Name of Teacher: **Dr.** **Suman Malik** Class: **BA I (2nd Sem.)**

Subject: Computer Science (**Computer Organization**) **Paper: BACS-122**

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| **Unit** | **Description of Chapter / Topics** | **Duration** | **Assignment / Test** |
| **Unit-1** | **Data Representation:**  Number Systems, Binary Arithmetic Operations, fixed and floating point representation of numbers, BCD Codes, Error detecting and correcting codes, Character representation – ASCII, EBCDIC Unicode, Weighted Codes, Self-complimentary Codes, Excess-3 codes, Gray and Cyclic Codes. | 29th January 2024  to  20th February, 2024 | Assignment-1 |
| **Unit-2** | **Boolean Algebra:** Boolean Algebra, Boolean Theorems, Boolean Functions, Truth Tables, Canonical and Standard forms of Boolean Functions, Simplification of Boolean functions- Venn Diagram, Karnaugh Maps.  **Logic gates:**  Basic Gates - AND, OR, NOT, Universal Gates - NOR, NAND Other Gates – XOR, XNOR etc. AND-OR-INVERT, OR-AND-INVERT, implementation of digital circuits,  Combinational Logic- Characteristics, Design Procedures, analysis procedures, Multilevel NAND and NOR circuits. | 21st February, 2024 to  10th March, 2024 | Test |
| **Unit-3** | **Combinational Circuits:**  Half Adder & Full Adder, Half Subtractor & Full Subtractor, Encoders, Decoders, Multiplexers, demultiplexers, Comparators, Code Converters BCD to Seven Segment Decoder.  **Sequential Circuits:**  Characteristics, Flip-Flops, Clocked-RS, T, D, JK and Master – Salve flip flops. State table, State diagram and State equations, Flip-flop excitation tables. | 11st March, 2024  to  31st March, 2024 | Assignment-2 |
| **Unit-4** | **Basic Computer Organisation and Design:** Register organisation, Bus system, instruction set, timing and control, instruction cycle, memory reference, input-output and reference.  **Programming the Basic Computer:** Instruction formats, addressing modes, instruction codes.  **Input-output Basic organisation:** Peripheral devices, I/O interface, Modes of data transfer, Direct Memory Access | 1st April, 2024  to  25th April, 2024 | Performance Improvement Test |
| **Revision** | Revision of Syllabus and Students Query Handling with Sample Papers | 26th April, 2024  to  Exam Date |  |

**Lesson Plan**

**Government College, Mangali**

**Unit wise Lesson Plan for** Even **Semester 2023-24**

**Department: Computer Science**

Name of Teacher: **Dr.** **Suman Malik** Class: **BA I (2nd Sem.)**

Subject: Computer Science (**Data Structure using C**) **Paper: BACS-121**

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| **Unit** | **Description of Chapter / Topics** | **Duration** | **Assignment / Test** |
| **Unit-1** | **Data Structure Basics:** Definition, Data Type vs. Data Structure, Categories of Data Structures, Data Structure Operations, Applications of Data Structures, Algorithms Complexity and Time-Space Trade-off, Big-O Notation.  **Arrays:** Introduction, Linear Arrays, Representation of Linear Array in Memory, Traversal, Insertions, Deletion in an Array, Multidimensional Arrays, Sparse Matrix. Algorithm for Insertion, Deletion Addition and Multiplication in 2-D Array.  Stacks: Representation of Stacks, Stack Operations, Applications, | 29th January 2024  to  20th February, 2024 | Assignment-1 |
| **Unit-2** | **Queues:** Queues, Operations on Queues, Circular Queues, Dequeue, Priority Queues, Applications.  **Linked Lists:** Introduction, Types, Operations (Insertion, Deletion, Traversal, Searching, Sorting), Applications, Dynamic Memory Management, Implementation of Linked Representations. | 21st February, 2024 to  10th March, 2024 | Test |
| **Unit-3** | **Trees:** Basic Terminology, Representation, Binary Trees, Tree Representations using Linked List, Basic Operation on Binary tree, Traversal of Binary Trees: In order, Pre-order & Post-order, Applications of Binary tree. Algorithm of Tree Traversal with and without Recursion.  **Graphs:** Definitions and Basic Terminologies, Representation of Graphs, Graph Traversals, Shortest Path Problem, Applications. | 11st March, 2024  to  31st March, 2024 | Assignment-2 |
| **Unit-4** | **Searching and Sorting Techniques**: Sorting Techniques: Bubble Sort, Merge Sort, Selection Sort’, Heap Sort, Insertion Sort. Searching Techniques: Sequential Searching, Binary Searching, Search Trees. | 1st April, 2024  to  25th April, 2024 | Performance Improvement Test |
| **Revision** | Revision of Syllabus and Students Query Handling with Sample Papers | 26th April, 2024  to  Exam Date |  |

**Lesson Plan**

**Government College, Mangali**

**Unit wise Lesson Plan for** Even **Semester 2023-24**

**Department: Computer Science**

Name of Teacher: **Dr.** **Suman Malik** Class: **B.Sc. I (2nd Sem.)**

Subject: Computer Science (**Computer Organization**) **Paper:** CCsL- 205

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| **Unit** | **Description of Chapter / Topics** | **Duration** | **Assignment / Test** |
| **Unit-1** | **Data Representation:**  Number Systems, Binary Arithmetic Operations, fixed and floating point representation of numbers, BCD Codes, Error detecting and correcting codes, Character representation – ASCII, EBCDIC Unicode, Weighted Codes, Self-complimentary Codes, Excess-3 codes, Gray and Cyclic Codes. | 29th January 2024  to  20th February, 2024 | Assignment-1 |
| **Unit-2** | **Boolean Algebra:** Boolean Algebra, Boolean Theorems, Boolean Functions, Truth Tables, Canonical and Standard forms of Boolean Functions, Simplification of Boolean functions- Venn Diagram, Karnaugh Maps.  **Logic gates:**  Basic Gates - AND, OR, NOT, Universal Gates - NOR, NAND Other Gates – XOR, XNOR etc. AND-OR-INVERT, OR-AND-INVERT, implementation of digital circuits,  Combinational Logic- Characteristics, Design Procedures, analysis procedures, Multilevel NAND and NOR circuits. | 21st February, 2024 to  10th March, 2024 | Test |
| **Unit-3** | **Combinational Circuits:**  Half Adder & Full Adder, Half Subtractor & Full Subtractor, Encoders, Decoders, Multiplexers, demultiplexers, Comparators, Code Converters BCD to Seven Segment Decoder.  **Sequential Circuits:**  Characteristics, Flip-Flops, Clocked-RS, T, D, JK and Master – Salve flip flops. State table, State diagram and State equations, Flip-flop excitation tables. | 11st March, 2024  to  31st March, 2024 | Assignment-2 |
| **Unit-4** | **Basic Computer Organisation and Design:** Register organisation, Bus system, instruction set, timing and control, instruction cycle, memory reference, input-output and reference.  **Programming the Basic Computer:** Instruction formats, addressing modes, instruction codes.  **Input-output Basic organisation:** Peripheral devices, I/O interface, Modes of data transfer, Direct Memory Access | 1st April, 2024  to  25th April, 2024 | Performance Improvement Test |
| **Revision** | Revision of Syllabus and Students Query Handling with Sample Papers | 26th April, 2024  to  Exam Date |  |

**Lesson Plan**

**Government College, Mangali**

**Unit wise Lesson Plan for** Even **Semester 2023-24**

**Department: Computer Science**

Name of Teacher: **Dr.** **Suman Malik** Class: **B.Sc. I (2nd Sem.)**

Subject: Computer Science (**Data Structure using C**) **Paper:** CCsL- 204

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| **Unit** | **Description of Chapter / Topics** | **Duration** | **Assignment / Test** |
| **Unit-1** | **Data Structure Basics:** Definition, Data Type vs. Data Structure, Categories of Data Structures, Data Structure Operations, Applications of Data Structures, Algorithms Complexity and Time-Space Trade-off, Big-O Notation.  **Arrays:** Introduction, Linear Arrays, Representation of Linear Array in Memory, Traversal, Insertions, Deletion in an Array, Multidimensional Arrays, Sparse Matrix. Algorithm for Insertion, Deletion Addition and Multiplication in 2-D Array.  Stacks: Representation of Stacks, Stack Operations, Applications, | 29th January 2024  to  20th February, 2024 | Assignment-1 |
| **Unit-2** | **Queues:** Queues, Operations on Queues, Circular Queues, Dequeue, Priority Queues, Applications.  **Linked Lists:** Introduction, Types, Operations (Insertion, Deletion, Traversal, Searching, Sorting), Applications, Dynamic Memory Management, Implementation of Linked Representations. | 21st February, 2024 to  10th March, 2024 | Test |
| **Unit-3** | **Trees:** Basic Terminology, Representation, Binary Trees, Tree Representations using Linked List, Basic Operation on Binary tree, Traversal of Binary Trees: In order, Pre-order & Post-order, Applications of Binary tree. Algorithm of Tree Traversal with and without Recursion.  **Graphs:** Definitions and Basic Terminologies, Representation of Graphs, Graph Traversals, Shortest Path Problem, Applications. | 11st March, 2024  to  31st March, 2024 | Assignment-2 |
| **Unit-4** | **Searching and Sorting Techniques**: Sorting Techniques: Bubble Sort, Merge Sort, Selection Sort’, Heap Sort, Insertion Sort. Searching Techniques: Sequential Searching, Binary Searching, Search Trees. | 1st April, 2024  to  25th April, 2024 | Performance Improvement Test |
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**Lesson Plan**

**Government College, Mangali**

**Unit wise Lesson Plan for** Even **Semester 2023-24**

**Department: Computer Science**

Name of Teacher: **Dr.** **Suman Malik** Class: **BA I (2nd Sem.)**

Subject: COMPUTER AWARENESS (LEVEL – I)  **Paper:** CALI 101 a

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| **Unit** | **Description of Chapter / Topics** | **Duration** | **Assignment / Test** |
| **Unit-1** | Computer: Definition, Characteristics, Applications, Components of Computer System, Input/Output Devices, Concept of Memory, Magnetic and Optical Storage Devices. Operating System- Windows: Definition & Functions of Operating System, Basic Components of Windows, Exploring Computer, Icons, taskbar, desktop, managing files and folders, Control panel. | 29th January 2024  to  20th February, 2024 | Assignment-1 |
| **Unit-2** | Word Processing: Introduction to Word Processing, Menus, Creating, Editing & Formatting Document, Spell Checking, Printing, Views, Tables, Word Art, Mail Merge, Macros. | 21st February, 2024 to  10th March, 2024 | Test |
| **Unit-3** | Spread Sheet: Elements of Electronics Spread Sheet, Applications, Creating and Opening of Spread Sheet, Menus, Manipulation of cells: Enter texts numbers and dates, Cell Height and Widths, Copying of cells, Mathematical, Statistical and Financial function, Drawing different types of charts. | 11st March, 2024  to  31st March, 2024 | Assignment-2 |
| **Unit-4** | Computer Communication: Internet and its applications, Surfing the Internet using web browsers, Creating Email Id, Viewing an E-Mail, Sending an E-Mail to a single and multiple users, Sending a file as an attachment. | 1st April, 2024  to  25th April, 2024 | Performance Improvement Test |
| **Revision** | Revision of Syllabus and Students Query Handling with Sample Papers | 26th April, 2024  to  Exam Date |  |