INDIRA GANDHI (P.G.) MAHILA MAHAVIDYALAYA, KAITHAL

Affiliated to KURUKSHETRA UNIVERSITY, KURUKSHETRA

Department of Computer Science

Lesson Plan (Session 2025-2026)

Class: B.sc /BA
Semester: I
Name of the Course: Problem Solving through C
Course Code B23-CSE-101
Dates: 22 July, 2025 – 24 Nov, 2025

SYLLABUS

Maximum Marks: 100
Time: 3 hours
End Term Exam Marks: 50(T) +20(P) =70 Marks
Assessment: 20(T) +10(P) =30 Marks

Note: Examiner will be required to set nine questions in all. First question will be compulsory, consisting of short type question covering the entire syllabus in addition to that eight more questions will be set, two question from each unit. Students will be required to attempt in all. In addition to the compulsory question, student will have to attempt four more questions selecting one question from each unit.

Unit	Topics	Contact Hours
Unit: I	Overview of C: History, Importance, Structure of C Program, Character Set, Constants and Variables, Identifiers and Keywords, Data Types, Assignment Statement, Symbolic Constant. Input/output: Formatted I/O Function-, Input Functions viz. scanf(), getch(), getche(), getchar(), gets(), output functions viz. printf(), putch(), putchar(), puts().	11
Unit: II	Operators & Expression: Arithmetic, Relational, Logical, Bitwise, Unary, Assignment, Conditional Operators and Special Operators Operator Hierarchy; Arithmetic Expressions, Evaluation of Arithmetic Expression, Type Casting and Conversion. Decision making with if statement, if else statement, nested if statement, else-if ladder, switch and break statement, goto statement, Looping Statements: for, while, and do while loop, jumps in loops.	12
Unit: III	Arrays: One-dimensional arrays - Declaration, Initialization, and Memory representation; Two-Dimensional arrays -Declaration, Initialization and Memory representation. Functions: definition, prototype, function call, passing arguments to a function: call by value; call by reference, recursive functions. Strings: Declaration and Initialization, String I/O, Array of Strings, String Manipulation Functions: String Length, Copy, Compare, Concatenate, etc., Search for a Substring.	11
Unit: IV	Pointers in C: Declaring and initializing pointers, accessing address and value of variables using pointers; Pointers, and Arrays. User-defined data types: Structures - Definition, Advantages of Structure, declaring structure variables, accessing structure members, Structure members initialization, Array of Structures; Unions - Union definition; the difference between Structure and Union.	11
V*	Practicum: Students are advised to do laboratory/practical practice not limited to, but including the following types of problems: • To read the radius of a circle and to find the area and circumference • To read three numbers and find the biggest of three • To check whether the number is prime or not • To read a number, find the sum of the digits, reverse the number, and check it for palindrome • To read numbers from the keyboard continuously till the user presses 999 to find the sum of only positive numbers • To read the percentage of marks and to display an appropriate message (Demonstration of else-if ladder) • To find the roots of the quadratic equation • To read marks scored by n students and find the average of marks (Demonstration of the single dimensional array) • To remove Duplicate Elements in a single dimensional Array • To perform addition and subtraction of Matrices • To find the factorial of a number • To generate Fibonacci series • To remove Duplicate Elements in a single dimensional Array • To find the length of a string without using the built-in function • To demonstrate string functions • To read, display, and add two m x n matrices using functions • To read a string and to find the number of alphabets, digits, vowels, consonants, spaces,	30

	and special characters • To Swap Two Numbers using Pointers • To demonstrate student structure to read & display records of n students • To demonstrate the difference between structure & union.	

Text Books:

Sushil Goel, Problem Solving through C , Natraj Publication

E. Balagurusamy , *Programming in ANSI C*

Course Outcomes:

After completing this course, the learner will be able to:

1. Learn the basics of C program, data types, and input/output statements.
2. Understand different types of operators, their hierarchies, and also control statements of C.
3. Implement programs using arrays and strings.
4. Get familiar with advanced concepts like structures, unions, etc. in C language.

Lesson Plan

SR. No	Date	Content Course	Practical
1	22 July -25July 2025	Overview of C: History, Importance, Structure of C Program, Character Set, Constants and Variables, Identifiers and Keywords, Data Types,	To read the radius of a circle and to find the area and circumference
2	28 July - 2 August	Assignment Statement, Symbolic Constant. Input/output: Formatted I/O Function-, Input Functions viz. scanf(), getch(), getche(), getchar(), gets(), output functions viz. printf(), putch(), putchar(), puts().	To read three numbers and find the biggest of three
3	4 August -8 August	Operators & Expression: Arithmetic, Relational, Logical, Bitwise, Unary, Assignment	To check whether the number is prime or not
4	11 August - 14 August	Conditional Operators and Special Operators Operator Hierarchy	To read a number, find the sum of the digits, reverse the number, and check it for palindrome
5	18 August - 23August	Else-if ladder, switch and break statement, goto statement, Looping Statements: for, while, and do while loop, jumps in loops.	To read numbers from the keyboard continuously till the user presses 999 to find the sum of only positive numbers
6	25 August -30 August	Arrays: One-dimensional arrays - Declaration, Initialization, and Memory representation; Two-Dimensional arrays - Declaration, Initialization and Memory representation.	To read the percentage of marks and to display an appropriate message (Demonstration of else-if ladder)
7	1 Sept. - 6 Sept.	Functions: definition, prototype, function call, passing arguments to a function: call by value; call by reference, recursive functions.	To find the roots of the quadratic equation
8	8 Sept. - 13 Sept.	Strings: Declaration and Initialization, String I/O, Array of Strings, String Manipulation Functions: String Length, Copy, Compare, Concatenate, etc., Search for a Substring.	To read marks scored by n students and find the average of marks (Demonstration of the single dimensional array)
9	15 Sept. - 20 Sept.	Pointers in C: Declaring and initializing pointers, accessing address and value of variables using pointers; Pointers, and Arrays.	To remove Duplicate Elements in a single dimensional Array
10	22 Sept. - 27 Sept.	Pointers, and Arrays. User-defined data types:	To perform addition and subtraction of Matrices
11	29 Sept.- 4 Oct.	Structures - Definition, Advantages of Structure, Array of Structures;	To remove Duplicate Elements in a single dimensional Array
12	6 Oct.- 11 Oct.	Declaring structure variables, accessing structure members	To Swap Two Numbers using Pointers
13	13 Oct.- 18 Oct.	Revision	To read, display, and add two m x n matrices using functions
14	27 Oct. - 1 Nov.	Structure members initialization	To find the length of a string without using the built-in function
15	3 Nov. - 8Nov	Revision	To read a string and to find the number of alphabets, digits, vowels, consonants, spaces, and special characters
16	10 Nov-15 Nov	Unions - Union definition; the difference between Structure and Union	To demonstrate student structure to read & display records of n students
17	17 Nov -22 Nov	Revision	Revision
18	24 Nov.	Revision.	Revision

Signature of Teacher **Head of Department**

INDIRA GANDHI (P.G.) MAHILA MAHAVIDYALAYA, KAITHAL

Affiliated to Kurukshetra University, Kurukshetra

Department Of Computer Science

Lesson Plan (Session 2024-2025)

Class: Bsc/BA — Semester: **III**
Name of the Course: Concepts of Operating Systems — Course Code B23-CSE-301
Dates: 22 July, 2025 – 24 Nov, 2025

SYLLABUS

Maximum Marks: 100 — Time: 3 hours
End Term Exam Marks: 50(T) +20(P) =70 Marks — Assessment: 20(T) +10(P) =30 Marks

Note: Examiner will be required to set nine questions in all. First question will be compulsory, consisting of short type question covering the entire syllabus in addition to that eight more questions will be set, two question from each unit. Students will be required to attempt in all. In addition to the compulsory question, student will have to attempt four more questions selecting one question from each unit.

Unit	Topics	Contact Hours
Unit: I	Introductory Concepts: Operating System, Functions and Characteristics, Historical Evolution of Operating Systems, Operating System Structure. Types of Operating System: Real-time, Multiprogramming, Multiprocessing, Batch processing. Operating System Services, Operating System Interface, Service System Calls, and System Programs. Process Management: Process Concepts, Operations on Processes, Process States, and Process Control Block. Inter-Process Communication.	11
Unit: II	CPU Scheduling: Scheduling Criteria, Levels of Scheduling, Scheduling Algorithms, Multiple Processor Scheduling, Algorithm Evaluation. Synchronization: Critical Section Problem, Semaphores, Classical Problem of Synchronization, Monitors. Deadlocks: Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention ,Deadlock Avoidance, Deadlock Detection and Recovery	12
Unit: III	Memory Management Strategies: Memory Management of Single-user and Multi-user Operating Systems, Partitioning, Swapping, Contiguous Memory Allocation, Paging and Segmentation; Virtual Memory Management: Demand Paging, Page Replacement Algorithms, Thrashing.	11
Unit: IV	Implementing File System: File System Structure, File System Implantation, File Operations, and Type of Files, Directory Implementation, Allocation Methods, and Free Space Management. Disk Scheduling algorithm-SSTF, Scan, C- Scan, Look, C-Look. SSD Management.	11
V*	Practicum: Students are advised to do laboratory / practical practice not limited to but including the following types of problems: Working with various operating systems, and performing different operations using operating systems. • Write a program to print file details including owner access permissions, and file access time, where file name is given as argument. • Write a program to copy files using system calls. • Write a program to implement the FCFS scheduling algorithm. • Write a program to implement the Round Robin scheduling algorithm. • Write a program to implement the SJF scheduling algorithm. • Write a program to implement anon-preemptive priority based scheduling algorithm. • Write a program to implement preemptive priority-based scheduling algorithm. • Write a program to implement the SRJF scheduling algorithm. • Write a program to calculate the sum of n numbers using the thread library. • Write a program to implement first-fit, best-fit, and worst-fit allocation strategies.	30

Text Books:

Sushil Goel, Concepts of Operating System, Natraj Publication

Course Outcomes:

After successfully completing this course, students will be able to:

1. Understand the basic concepts of operating systems and its services along with process management..
2. Understand concept of process scheduling and acquire knowledge of process synchronization
3. Learn about memory management and virtual memory concepts.
4. Learn to work with directory structure and security aspects.
5. To implement the programs based on operating systems.

Lesson Plan

SR. No	Date	Course Content	Practical
1	22 July -25July 2025	Introductory Concepts: Operating System, Functions and Characteristics, Historical Evolution of Operating Systems, Operating System Structure.	Write a program to print file details including owner access permissions, and file access time, where file name is given as argument.
2	28 July - 2 August	Types of Operating System: Real-time, Multiprogramming, Multiprocessing, Batch processing. Operating System Services Operating System Interface, Service System Calls, and System Programs.	Write a program to copy files using system calls.
3	4 August -8 August	Process Management: Process Concepts, Operations on Processes, Process States, and Process Control Block. Inter-Process Communication.	Write a program to implement the FCFS scheduling algorithm.
4	11 August - 14 August	CPU Scheduling: Scheduling Criteria, Levels of Scheduling, Scheduling Algorithms, Multiple Processor Scheduling, Algorithm Evaluation	Write a program to implement the Round Robin scheduling algorithm.
5	18 August - 23August	Synchronization: Critical Section Problem, Semaphores, Classical Problem of Synchronization, Monitors.	Write a program to implement the SJF scheduling algorithm.
6	25 August -30 August	Deadlock Characterization, Methods for Handling Deadlocks,	Write a program to implement anon-preemptive priority based scheduling algorithm.
7	1 Sept. - 6 Sept.	Deadlock Prevention ,Deadlock Avoidance, Deadlock Detection and Recovery	Write a program to implement preemptive priority-based scheduling algorithm.
8	8 Sept. - 13 Sept.	Memory Management Strategies: Memory Management of Single-user and Multi-user Operating Systems,	Write a program to implement the SRJF scheduling algorithm.
9	15 Sept. - 20 Sept.	Partitioning, Swapping, Contiguous Memory Allocation, Paging and Segmentation;	Write a program to calculate the sum of n numbers using the thread library.
10	22 Sept. - 27 Sept.	Virtual Memory Management: Demand Paging, Page Replacement Algorithms, Thrashing.	Write a program to implement first-fit allocation strategies.
11	29 Sept.- 4 Oct.	Implementing File System: File System Structure, File System Implantation, File Operations,	Write a program to implement best-fit
12	6 Oct.- 11 Oct.	Type of Files, Directory Implementation,	Write a program to implement worst fit allocation strategies
13	13 Oct.- 18 Oct.	Allocation Methods, and Free Space Management.	Write a program to implement best-fit
14	27 Oct. - 1 Nov.	Disk Scheduling algorithm-SSTF, Scan	Write a program to implement the Round Robin scheduling algorithm.
15	3 Nov. - 8Nov	C- Scan, Look, C-Look. SSD Management.	Revision
16	10 Nov-15 Nov	Revision	Write a program to print file details including owner access permissions, and file access time, where file name is given as argument.
17	17 Nov -22 Nov	Revision	Revision
18	24 Nov.	Revision	Revision

Signature of Teacher

Head of Department

INDIRA GANDHI (P.G.) MAHILA MAHAVIDYALAYA, KAITHAL

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Department of Computer Science

Lesson Plan (Session 2025-2026)

Class:BA Semester: III
Name of the Course: Programming with C Course Code B23-CSE-303
Dates: 22 July, 2025 – 24 Nov., 2025

SYLLABUS

Maximum Marks: 100 Time: 3 hours
End Term Exam Marks: 50(T) +20(P) =70 Marks Assessment: 20(T) +10(P) =30 Marks

Note: Examiner will be required to set nine questions in all. First question will be compulsory, consisting of short type question covering the entire syllabus in addition to that eight more questions will be set, two question from each unit. Students will be required to attempt in all. In addition to the compulsory question, student will have to attempt four more questions selecting one question from each unit.

Unit	Topics	Contact Hours
Unit: I	Overview of C: History, Importance, Structure of C Program, Character Set, Constants and Variables, Identifiers and Keywords, Data Types, Assignment Statement, Symbolic Constant. Input/output: Formatted I/O Function-, Input Functions viz. scanf(), getch(), getche(), getchar(), gets(), output functions viz. printf(), putch(), putchar(), puts().	11
Unit: II	Operators & Expression: Arithmetic, Relational, Logical, Bitwise, Unary, Assignment, Conditional Operators and Special Operators Operator Hierarchy; Arithmetic Expressions, Evaluation of Arithmetic Expression, Type Casting and Conversion. Decision making with if statement, if else statement, nested if statement, else-if ladder, switch and break statement, goto statement, Looping Statements: for, while, and do while loop, jumps in loops.	12
Unit: III	Arrays: One-dimensional arrays - Declaration, Initialization, and Memory representation; Two-Dimensional arrays -Declaration, Initialization and Memory representation. Functions: definition, prototype, function call, passing arguments to a function: call by value; call by reference, recursive functions. Strings: Declaration and Initialization, String I/O, Array of Strings, String Manipulation Functions: String Length, Copy, Compare, Concatenate, etc., Search for a Substring.	11
Unit: IV	Pointers in C: Declaring and initializing pointers, accessing address and value of variables using pointers; Pointers, and Arrays. User-defined data types: Structures - Definition, Advantages of Structure, declaring structure variables, accessing structure members, Structure members initialization, Array of Structures; Unions - Union definition; the difference between Structure and Union.	11
V*	Practicum: Students are advised to do laboratory/practical practice not limited to, but including the following types of problems: • To read the radius of a circle and to find the area and circumference • To read three numbers and find the biggest of three • To check whether the number is prime or not • To read a number, find the sum of the digits, reverse the number, and check it for palindrome • To read numbers from the keyboard continuously till the user presses 999 to find the sum of only positive numbers • To read the percentage of marks and to display an appropriate message (Demonstration of else-if ladder) • To find the roots of the quadratic equation • To read marks scored by n students and find the average of marks (Demonstration of the single dimensional array) • To remove Duplicate Elements in a single dimensional Array • To perform addition and subtraction of Matrices • To find the factorial of a number • To generate Fibonacci series • To remove Duplicate Elements in a single dimensional Array • To find the length of a string without using the built-in function • To demonstrate string functions • To read, display, and add two m x n matrices using functions • To read a string and to find the number of alphabets, digits, vowels, consonants, spaces,	30

	and special characters • To Swap Two Numbers using Pointers • To demonstrate student structure to read & display records of n students • To demonstrate the difference between structure & union.	

Text Books:

Sushil Goel, Problem Solving through C, Natraj Publication

E. Balagurusamy – *Programming in ANSI C*

Course Outcomes:

After completing this course, the learner will be able to:

1 Learn the basics of C program, data types, and input/output statements.

2 Understand different types of operators, their hierarchies, and also control statements of C.

3 Implement programs using arrays and strings.

4 Get familiar with advanced concepts like structures, unions, etc. in C language.

Lesson Plan

SR. No	Date	Content Course	Practical
1	22 July -25July 2025	Overview of C: History, Importance, Structure of C Program, Character Set, Constants and Variables, Identifiers and Keywords, Data Types,	To read the radius of a circle and to find the area and circumference
2	28 July - 2 August	Assignment Statement, Symbolic Constant. Input/output: Formatted I/O Function-, Input Functions viz. scanf(), getch(), getche(), getchar(), gets(), output functions viz. printf(), putch(), putchar(), puts().	To read three numbers and find the biggest of three
3	4 August -8 August	Operators & Expression: Arithmetic, Relational, Logical, Bitwise, Unary, Assignment	To check whether the number is prime or not
4	11 August - 14 August	Conditional Operators and Special Operators Operator Hierarchy	To read a number, find the sum of the digits, reverse the number, and check it for palindrome
5	18 August - 23August	Else-if ladder, switch and break statement, goto statement, Looping Statements: for, while, and do while loop, jumps in loops.	To read numbers from the keyboard continuously till the user presses 999 to find the sum of only positive numbers
6	25 August -30 August	Arrays: One-dimensional arrays - Declaration, Initialization, and Memory representation; Two-Dimensional arrays - Declaration, Initialization and Memory representation.	To read the percentage of marks and to display an appropriate message (Demonstration of else-if ladder)
7	1 Sept. - 6 Sept.	Functions: definition, prototype, function call, passing arguments to a function: call by value; call by reference, recursive functions.	To find the roots of the quadratic equation
8	8 Sept. - 13 Sept.	Strings: Declaration and Initialization, String I/O, Array of Strings, String Manipulation Functions: String Length, Copy, Compare, Concatenate, etc., Search for a Substring.	To read marks scored by n students and find the average of marks (Demonstration of the single dimensional array)
9	15 Sept. - 20 Sept.	Pointers in C: Declaring and initializing pointers, accessing address and value of variables using pointers; Pointers, and Arrays.	To remove Duplicate Elements in a single dimensional Array
10	22 Sept. - 27 Sept.	Pointers and Arrays. User-defined data types:	To perform addition and subtraction of Matrices
11	29 Sept.- 4 Oct.	Structures - Definition, Advantages of Structure, Array of Structures;	To remove Duplicate Elements in a single dimensional Array
12	6 Oct.- 11 Oct.	Declaring structure variables, accessing structure members	To Swap Two Numbers using Pointers
13	13 Oct.- 18 Oct.	Structure members initialization	To read, display, and add two m x n matrices using functions
14	27 Oct. - 1 Nov.	Unions - Union definition; the difference between Structure and Union.	To find the length of a string without using the built-in function
15	3 Nov. - 8Nov	Revision	To read a string and to find the number of alphabets, digits, vowels, consonants, spaces, and special characters
16	10 Nov-15 Nov	Unions - Union definition; the difference between Structure and Union	To demonstrate student structure to read & display records of n students
17	17 Nov -22 Nov	Revision	Revision
18	24 Nov.	Revision.	Revision

Signature of Teacher **Head of Department**

INDIRA GANDHI (P.G.) MAHILA MAHAVIDYALAYA, KAITHAL

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Department Of Computer Science

Lesson Plan (Session 2024-2025)

Class: B.sc/BA
Name of the Course: Data Structures and Applications
Dates: 22 July, 2025 – 24 Nov., 2025

Semester: **V**
Course Code B23-CSE-501

SYLLABUS

Maximum Marks: 100
End Term Exam Marks: 50(T) +20(P) =70 Marks

Time: 3 hours
Assessment: 20(T) +10(P) =30 Marks

Note: Examiner will be required to set nine questions in all. First question will be compulsory, consisting of short type question covering the entire syllabus in addition to that eight more questions will be set, two question from each unit. Students will be required to attempt in all. In addition to the compulsory question, student will have to attempt four more questions selecting one question from each unit.

Unit	Topics	Contact Hours
Unit: I	Data Structure Definition, Data Type vs. Data Structure, Classification of Data Structures, Data Structure Operations, Applications of Data Structures. Algorithm Specifications: Performance Analysis and Measurement (Time and Space Analysis of Algorithms- Average, Best and Worst Case Analysis). Arrays: Introduction, Linear Arrays, Representation of Linear Array in Memory, Two Dimensional and Multidimensional Arrays, Sparse Matrix and its Representation, Operations on Array: Algorithm for Traversal, Selection, Insertion, Deletion and its implementation.	11
Unit: II	String Handling: Storage of Strings, Operations on Strings viz., Length, Concatenation, Sub-string, Insertion, Deletion, Replacement, Pattern Matching Linked List: Introduction, Array vs. Linked list, Representation of linked lists in Memory, Traversing a Linked List, Insertion, Deletion, Searching into a Linked list, Type of Linked List.	11
Unit: III	Stack: Array Representation of Stack, Linked List Representation of Stack, Algorithms for Push and Pop, Application of Stack: Polish Notation, Postfix Evaluation Algorithms, Infix to Postfix Conversion, Infix to Prefix Conversion, Recursion. Introduction to Queues: Simple Queue, Double Ended Queue, Circular Queue, Priority Queue, Representation of Queues as Linked List and Array, Applications of Queue. Algorithm on Insertion and Deletion in Simple Queue and Circular Queue. Priority Queues.	12
Unit: IV	Tree: Definitions and Concepts, Representation of Binary Tree, Binary Tree Traversal (In-order, post-order, preorder), Binary Search Trees–Definition, Operations viz., searching, insertions and deletion; Searching and Sorting Techniques, Sorting Techniques: Bubble sort, Merge sort, Selection sort, Quick sort, Insertion Sort. Searching Techniques: Sequential Searching, Binary Searching	11
V*	Practicum: Students are advised to do laboratory/practical practice not limited to but including the following types of problems: Write a program that uses functions to perform the following operations on an array i)Creation ii)Insertion iii) Deletion iv) Traversal. Write a program that uses functions to perform the following operations on strings i) Creation ii) Insertion iii) Deletion iv) Traversal. Write a program that uses functions to perform the following operations on a singly linked list i) Creation ii) Insertion iii) Deletion iv) Traversal. Write a program that uses functions to perform the following operations on a doubly linked list i) Creation ii) Insertion iii) Deletion iv) Traversal	30

	Write a program that implement stack (its operations) using i) Arrays ii) Linked list (Pointers). Write a program that implements Queue (its operations) using i) Arrays and ii) Linked lists (Pointers). Write a program that implements the following sorting i) Bubble sort ii) Selection sort iii) Quick sort. Write programs for various types of tree traversals	

Text Books :

Vikram Gupta SS Bhatiya Jaideep Atri Data Structures and Applications Kalyani Publications

Course Outcomes :

After successfully completing this course, students will be able to

1. Understand different methods of organizing large amount of data using data structure.
2. Implement abstract data types using arrays and linked list.
3. Apply the different linear data structures like stack and queue to various computing problems.
4. Implement different types of trees and apply them to problem solutions.
5. Discuss graph structure and understand various operations on graphs and their applicability.
6. Analyze the various sorting and searching algorithms.

Lesson Plan

SR. No	Date	Course Content	
		Theory	**Practical**
1	22 July -25July 2025	Students Doing their Internship	----------
2	28 July - 2 August	Students doing their Internship	----------
3	4 August -8 August	Data Structure Definition, Data Type vs. Data Structure, Classification of Data Structures, Data Structure Operations,	Write a program that uses functions to perform the following operations on an array Creation, Insertion, Deletion, Traversal.
4	11 August - 14 August	Applications of Data Structures. Algorithm Specifications: Performance Analysis and Measurement (Time and Space Analysis of Algorithms- Average, Best and Worst Case Analysis).	Write a program that uses functions to perform the following operations on strings Creation, Insertion, Deletion, Traversal.
5	18 August - 23August	Arrays: Introduction, Linear Arrays, Representation of Linear Array in Memory, Two Dimensional and Multidimensional Arrays, Sparse Matrix and its Representation, Operations on Array: Algorithm for Traversal, Selection, Insertion, Deletion and its implementation.	Write a program that uses functions to perform the following operations on a singly linked list Creation, Insertion, Deletion, Traversal.
6	25 August -30 August	String Handling: Storage of Strings,	Write a program that uses functions to perform the following operations on a doubly linked list
7	1 Sept. - 6 Sept.	Operations on Strings viz., Length, Concatenation, Sub-string, Insertion, Deletion, Replacement, Pattern Matching Linked List	Write a program that implement stack (its operations) using Arrays, Linked list (Pointers).
8	8 Sept. - 13 Sept.	Introduction, Array vs. Linked list, Representation of linked lists in Memory, Traversing a Linked List, Insertion, Deletion, Searching into a Linked list, Type of Linked List.	Write a program that implements Queue (its operations) using Arrays
9	15 Sept. - 20 Sept.	Stack: Array Representation of Stack, Linked List Representation of Stack, Algorithms for Push and Pop,	Linked lists (Pointers).
10	22 Sept. - 27 Sept.	Polish Notation, Postfix Evaluation Algorithms, Infix to Postfix Conversion, Infix to Prefix Conversion, Recursion.	Write a program that implements the following sorting i) Bubble sort
11	29 Sept.- 4 Oct.	Introduction to Queues: Simple Queue, Double Ended Queue, Circular Queue, Priority Queue, Representation of Queues as Linked List and Array, Applications of Queue.	ii) Selection sort
12	6 Oct.- 11 Oct.	Application of Stack: Algorithm on Insertion and Deletion in Simple Queue and Circular Queue. Priority Queues.	iii) Quick sort.
13	13 Oct.- 18 Oct.	Tree: Definitions and Concepts, Representation of Binary Tree, Binary Tree Traversal (In-order, post-order, preorder),	Write programs for various types of tree traversals
14	27 Oct. - 1 Nov.	Binary Search Trees–Definition, Operations viz., searching, insertions and deletion;	Revision
15	3 Nov. - 8Nov	Searching and Sorting Techniques, Sorting Techniques	Write programs for various types of tree traversals
16	10 Nov-15 Nov	Bubble sort, Merge sort, Selection sort,	Write programs for various types of tree traversals
17	17 Nov -22 Nov	Quick sort, Insertion Sort.	Revision
18	24 Nov.	Searching Techniques: Sequential Searching, Binary Searching	Revision

Signature of Teacher **Head of Department**