Govt. Polytechnic Mandkola (Palwal)
LessonPlan

Name of the Faculty : Sh. Rahul Kaushik
Discipline : Computer Engg.
Semester : 4th
Subject : Data Structure using C
Lesson plan duration : 15weeks (from 6th March 2023 to 23rd June 2023)

Week	Theory		Practical	
	Lecture Day	Topic (includingassignments/tests)	Practical Day	Topic
1stWeek	1st	Problem solving concept ,Top-down and bottom-updesign,structured programming	1st G1	ExerciseofC Programme
	2nd	Concept of data type,variablesandconstants	2nd G2	ExerciseofC Programme
	3rd	Introduction to dataStructure(Linear, NonLinear,Primitive,Non Primitive))		
Week2	1st	ConceptofDataStructure(Array, Linked List, Stack,Queue,Trees,Graphs)	1st G1	ExerciseofC Programme
	2nd	ConceptofArrays	2nd G2	ProgrammeregardingArray
	3rd	One dimensional Array,Two Dimensional Array:Representation of TwodimensionalArray(Base address,LB,UB)		
Week3	1st	Operational on Arrays withAlgorithms(inserting, deleting)	1st G1	ProgrammeregardingArray
	2nd	Operational on Arrays withAlgorithms (Searching,Traversing		
	3rd	Introductiontolinkedlist anddoublelinkedlist,	2nd G2	ProgrammeregardingArray

		RepresentationofLinkedlistinMemory		
Week 4	1st	DescribeandComparison between Linked list andArray	1st G1	ProgrammeofMatrices
	2nd	TraversingandSearching LinkedList		
	3rd	InsertionanddeletionintoLinkedlist	2nd G2	ProgrammeofMatrices
Week 5	1st	ApplicationofLinkedList and Explain Doubly LinkedList	1st G1	ProgrammeofadditionoftwoMatricesusingfunction
	2nd	Traversing, Insertion anddeletionintodoublyLinked List		
	3rd	IntroductiontoStack, Representation ofStacksWithArrayandLinkedlist	2nd G2	ProgrammeofadditionoftwoMatricesusingfunction
Week 6	1st	ImplementationofStacks	1st G1	Programme of inserting and deletingelementsinarray
	2nd	Application of stack (PolishNotation, Converting InfixtoPostFixNotation)		
	3rd	Evaluation of Post fixNotationandTowero f Hanoi	2nd G2	Programme of inserting and deletingelementsinarray
Week 7	1st	Recursion:ConceptandComparisonbetween recursionandIteration	1st G1	ProgrammeofPushandPOPOperationinstack
	2nd	Introductionof QueuesandImplementation ofqueues(arrayandLinkedlistwith algorithm)		
	3rd	Introductionof QueuesandImplementation ofqueues(arrayandLinkedlistwith algorithm)	2nd G2	ProgrammeofPushandPOPOperationinstack
Week 8	1st	Explain Circular Queues andDe-Queues	1st G1	Programme ofConversion from in-fixnotation
	2nd	Introductionof Treesand ConceptofBinaryTrees		
	3rd	ExplainCompleteandExtendedBinaryTree	2nd G2	Programme ofConversion from in-fixnotation
Week 9	1st	Conceptofrepresentation ofBinaryTree	1st G1	Programme ofthe Factorial of givennumberusingrecursion
	2nd	Conceptofrepresentation ofbalancedBinaryTree		

	3rd	Explain Traversing BinaryTrees (Pre Order, PostOrderandInOrder)	2nd G 2	Programme ofthe Factorial of givennumberusingrecursion
Week 10	1st	Explain Searching, insertinganddeletinginbinaryseary trees	1st G 1	Insertion and Deletion of elements inQueue and Circular Queue usingPointer
	2nd	Explain Searching, insertingand deleting in binary searytrees		
	3rd	ProblemsSolution	2nd G 2	InsertionandDeletionofelementsin Queueand Circular Queue usingPointer
Week 11	1st	Test	1st G1	InsertionandDeletionofelementsin LinkedListanddoublyLinkedlist
	2nd	ProblemsSolution		
	3rd	PrevioustopicExplain	2nd G2	Insertion and Deletion of elements inLinkedListanddoublyLinkedlist
Week 12	1st	IntroductionofSortingand Searching	1st G 1	Programme of Linear Searchprocedures to search an element ingivenlist
	2nd	Search algorithm(LinearandBinary)		
	3rd	Search algorithm(LinearandBinary)	2nd G 2	Programme of Binary Searchprocedurestosearchaneleme ntin givenlist
Week 13	1st	Conceptandusesof Sorting	1st G 1	PreviousProblemssolution
	2nd	Sorting Algorithm (Bubblesort)		
	3rd	SortingAlgorithm(Insertion sort)	2nd G2	PreviousProblemssolution
Week 14	1st	Sorting Algorithm (Selectionsort)	1st G 1	ProgrammeofBubbleSort
	2nd	SortingAlgorithm(Merge Sort)		
		Sorting Algorithm (Radixsort)		ProgrammeofBubbleSort
	3rd	SortingAlgorithm(Heap Sort)	2nd G2	
Week 15	1st	ProblemsSolution	1st G 1	ProgrammeofSelectionSort
	2nd	Problemssolution		
	3rd	Test	2nd G2	ProgrammeofSelectionSort