Teaching Plan Academic Year 2019-2020

Name of Teacher: P.M.BACHIPHALE

Class: B.SC(CS). T.Y. **Semester:** VI

Course Title: ADVANCED DATA STRUCTURE   **Course Code: U-ADA-705**

Unit	Topics To be Covered	Date	No. of Lectures
Unit I	Algorithm – Definition and Characteristics, Efficiency of an algorithm, Time and space,complexityAsymptotic notations: big-oh notation (O), big-omega notation (Ω), big-theta notation (θ) ,Time space trade-off , Abstract data type,	16/12/2019 to 24/12/2019	6
	Introduction to data structures: Need of data structure, Categories of data structures,operations; Arrays storage representation of 1D, 2D and Multi-dimensional arrays, Sparse,matrix, operations and Representation, Applications of array	26/12/2019 to 6/1/2019	7
	Stacks & Queues: Stack - Definition, Operation on stack, Implementation using arrays and linked lists, Applications of Stacks, Function Calling, Recursion- direct & indirect recursion, Evaluation of arithmetic Expressions, Conversion of Expressions -	07/01/2020 to 14/01/2020	5

Unit II	Prefix, Infix and Postfix expressions. Queues: Definition, Implementations using arrays and linked lists, Circular queue, Dequeue, Priority queues, Applications of queues.	16/01/2020 to 01/02/2020	12

Unit III	**CUNIT III 15 Hrs** **Linked list: Concept of linked list, Operations on Linked list: Creation, insertion, Deletion,Insertion and deletion examples, Types of linked list: Circular linked list, Doubly linked list,Implementation of stack and queue using linked list,Trees Graphs and their applications** **Trees terminology, Binary tree, Traversal methods, Tree traversal algorithms, Threaded,binary tree, Graph terminologies, Graph Representation: Sequential and Linked list, Graph,Traversal – Depth First Search, Breadth First Search, Applications, AOV network, topological**	03/02/2020 to 25/03/2020	12

Unit IV	**Searching: Linear and Binary** **Sorting: Bubble sort, Selection sort, Insertion sort** **More algorithms: Divide and Conquer, Greedy Method, Dynamic Programming, Backtracking**	06/03/2020 to 31/03/2020	13

Teaching Plan Academic Year 2019-2020

Name of Teacher: P.M BACHIPHALE

Class: BCA. S.Y. **Semester: IV**

Course Title: PROGRAMMING WITH JAVA   **Course Code:** U-PWJ-492

Unit	Topics To be Covered	Date	No. of Lectures
Unit I	**1. An Introduction to Java:** A Short History of Java, Features of Java, Comparison of Java and C++, Java virtual machine, Java program structure, Creating and Running Java Programs, Command Line Arguments	12/12/2019 to 24/12/2019	9
	2. Programming Construct : Decision making statement, switch statement, looping statement	26/12/2019 to 08/01/2020	10
Unit II	**3. Classes and Objects :** Introduction, Defining a class, Adding variables, Adding Methods, Creating Objects, Accessing Class Members, Constructors. Method Overloading, Static Members **4. Inheritance:** Extending a class, Overriding Method, using super, Final variable and Methods, this keyword	09/01/2020 to 20/01/2020	6
		21/01/2020 to 04/02/2020	10

Unit III	**5. Arrays, Strings:** Introduction, One-dimensional and Two-dimensional Arrays, String Arrays, String Method.	05/02/2020 to 12/02/2020	5
	6. Packages and Interface: Java API package, Using system packages, Creating Packages & Using a Package, Interface Introduction, creating and using interfaces	13/02/2020 to 26/02/2020	8
Unit IV	**7. Multithreaded Programming:** Introduction, Life Cycle of a Thread, Creating Threads, Extending the Thread Class, Stopping and Blocking a Thread, Thread Priorities	07/03/2020 to 18/03/2020	6
	8. Applets: Life cycle of Applet, Creation and Execution of Java Applets, Applet tag, Parameter Passing to applet	19/03/2020 to 31/03/2020	4