



A T M E
College of Engineering



Department of Computer Science & Engineering (Data- Science)

Lesson Plan & Work-done Diary for AY: 2024-25, EVEN Semester

Course with Code: Analysis & Design of Algorithms – BCS401				Faculty: Mrs. Madhu Nagaraj		Semester & Section: IV	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks
MODULE-1							
1.		INTRODUCTION: What is an Algorithm?, Fundamentals of Algorithmic Problem Solving.	PPT Chalk & Talk				
2.		Fundamentals of Algorithmic Problem Solving.	PPT Chalk & Talk				
3.		Analysis Framework	PPT Chalk & Talk				
4.		Performance Analysis	PPT Chalk & Talk				
5.		Asymptotic Notations: Big-Oh , Omega notation (Ω), Theta notation ()	PPT Chalk & Talk				
6.		Mathematical analysis of Non-Recursive and Recursive Algorithms with Examples.	PPT Chalk & Talk				
7.		Brute force design technique: Selection sort, sequential search,	PPT Chalk & Talk				
8.		string matching algorithm with complexity Analysis	PPT Chalk & Talk				



A T M E
College of Engineering



Department of Computer Science & Engineering (Data- Science)

Course with Code: Analysis & Design of Algorithms – BCS401				Faculty: Mrs. Madhu Nagaraj		Semester & Section: IV	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks
MODULE-2							
9.		Exhaustive Search -Travelling Salesman problem	Chalk & Talk				
10.		Exhaustive Search (Knapsack Problem).	Chalk & Talk				
11.		Insertion Sort,	Chalk & Talk				
12.		Topological Sorting.	Chalk & Talk				
13.		Merge Sort,	Chalk & Talk				
14.		Quick Sort,	Chalk & Talk				
15.		Binary Tree Traversals,	Chalk & Talk				
16.		Multiplication of Large Integers Strassen's Matrix Multiplication.	Chalk & Talk				



A T M E
College of Engineering



Department of Computer Science & Engineering (Data- Science)

Course with Code: Analysis & Design of Algorithms – BCS401				Faculty: Mrs. Madhu Nagaraj		Semester & Section: IV	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks
MODULE-3							
17.		TRANSFORM-AND-CONQUER: Balanced Search Trees,	Chalk & Talk				
18.		Heaps and Heapsort.	Chalk & Talk				
19.		Heapsort.	Chalk & Talk				
20.		SPACE-TIME TRADEOFFS: Sorting by Counting:	Chalk & Talk				
21.		Comparison counting sort	Chalk & Talk				
22.		Input Enhancement in String Matching: Horspool's Algorithm.	Chalk & Talk				
23.		Horspool's Algorithm. Cntd	Chalk & Talk				
24.		QP Problems Solving	Chalk & Talk				



A T M E
College of Engineering



Department of Computer Science & Engineering (Data- Science)

Course with Code: Analysis & Design of Algorithms – BCS401				Faculty: Mrs. Madhu Nagaraj		Semester & Section: IV	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks
MODULE-4							
25.		Dynamic Programming: General method with Three basic examples,	Chalk & Talk				
26.		Three basic examples cntd					
27.		The Knapsack Problem and Memory Functions	Chalk & Talk				
28.		Warshall's Algorithms.	Chalk & Talk				
29.		Floyd's Algorithms	Chalk & Talk				
30.		THE GREEDY METHOD: Prim's Algorithm	Chalk & Talk				
31.		Kruskal's Algorithm	Chalk & Talk				
32.		Dijkstra's Algorithm,	Chalk & Talk				
33.		Huffman Trees and Codes.	Chalk & Talk				



A T M E
College of Engineering



Department of Computer Science & Engineering (Data- Science)

Course with Code: Analysis & Design of Algorithms – BCS401				Faculty: Mrs. Madhu Nagaraj		Semester & Section: IV	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks
MODULE-5							
34.		LIMITATIONS OF ALGORITHMIC POWER: Decision Trees,	Chalk & Talk				
35.		P, NP, and NP-Complete Problems.	Chalk & Talk				
36.		COPING WITH LIMITATIONS OF ALGORITHMIC POWER: Backtracking (n-Queens problem,	Chalk & Talk				
37.		Subset-sum problem	Chalk & Talk				
38.		Branch-and-Bound (Knapsack problem)	Chalk & Talk				
39.		Approximation algorithms for NP-Hard problems	Chalk & Talk				
40.		Knapsack problem	Chalk & Talk				



A T M E
College of Engineering



Department of Computer Science & Engineering (Data- Science)

	Activity	Planned	Actual	Remarks
1	Theory Classes			
2	Assignments/ Quizzes/ Self-study			
3	Tutorials/ Extra classes			
4	Internal Assessments			
5	ICT based Teaching (% of usage in Curriculum)			
Planning			Execution	
Faculty Signature:			Faculty Signature:	
HoD Signature:			HoD Signature:	