CMR INSTITUTE OF TECHNOLOGY

ACADEMIC YEAR 2025-26

VIDEO CLASS REPORT

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

Subject code	**BCS401**	**Course Name**	**Analysis & Design of Algorithm**
Semester / Section	**4th semester/B**	**Prepared By**	**Dinesh Kumaar R**
Curriculum Gap Identified:	The current pedagogy for the Analysis & Design of Algorithms (BCS401) course is predominantly lecture-driven, which restricts student participation and limits deep engagement with algorithmic concepts. Core topics such as asymptotic analysis, divide-and-conquer, dynamic programming, and graph algorithms are introduced with insufficient scaffolding, making it difficult for students to intuitively understand problem-solving strategies and complexity analysis. While the syllabus emphasizes theoretical understanding and classical algorithms, it does not consistently incorporate real-world applications or practical scenarios that highlight the relevance of these techniques in modern computing. Additionally, assessment methods are largely individual and theory-focused, providing limited opportunities for collaborative learning, coding practice, and peer-based problem solving. This creates a gap in developing critical skills such as algorithm design thinking, optimization, and teamwork, which are essential for both industry readiness and competitive programming.		

Summary of Flipped Classes conducted:

Sl No.	Topic	Date	Duration	Total number of students
1	**Insertion sort**	**18-3-2026**	**45 min**	**60**
2	**Dynamic Programming: Dispensing coin problem**	**5-5-2026**	**30 min**	**52**
3	**Interview Preparation: Leet code patterns**	**12-5-2026**	**30 min**	**45**

Detailed Report

1	**Sorting by Counting: Comparison counting sort**	**18/03/26**	**45 min**	**60**

Link

1. Youtube video (Insertion sort) - https://www.youtube.com/watch?v=nKzEJWbkPbQ
2. Simulation (Insertion sort)
- https://vlab.andcollege.du.ac.in/csSc/insertion_sort/simulation/index.html

Photo Proof:

Conduction:
A video session was conducted on the topic "**Insertion sort**" on **18.03.26**.

Outcome:
Students are able to understand Insertion sort. The students understood the use cases of implementing this algorithm. A live simulation was shown to the students and they have been asked to try the simulation with different set of inputs.
PO1, PO2, PO5, & PO12 are addressed through this video class.

2	**Dynamic Programming: Dispensing coin problem**	**5-5-2026**	**30 min**	**52**

Link

1. Youtube video (Dynamic Programming) -
Mastering Dynamic Programming - How to solve any interview problem

Photo Proof:

Conduction:
A video session was conducted on the topic "**Dynamic Programming: Dispensing coin problem**

" on **05.05.26**.

Outcome:
Students are able to understand what dynamic programming is and how it is helping to reduce the time complexity of a problem. An interview problem was also discussed. The coin dispensing problem and how the same problem can be asked as a sub set problem was also discussed. Students were able to understand the underlying hidden concept and how to approach it using dynamic programming.
PO1, PO2, PO5, & PO12 are addressed through this video class.

3	**Interview Preparation: Leet code patterns**	**12-5-2026**	**30 min**	**45**

Link

1. Youtube video (Kadane's Algorithm) -
LeetCode 53 | Maximum Subarray Solution (Kadane's Algorithm) Visually Explained | Top Interv
2. Youtube video (Leet Code Patterns) - LeetCode was HARD until I Learned these 15 Patterns

Photo Proof:

Conduction:
A video session was conducted on the topic "**Interview preparation**" on **12.05.26**.

Outcome:
Students are able to understand how to approach the different problems in technical interviews. They were introduced to maximum sum in a sub array problem. They were shown kadane's algorithm to solve the problem. Then 15 leet code patterns were discussed with the students in the video. We have connected how ADA is going to help them in solving the technical interviews.
PO1, PO2, PO5, & PO12 are addressed through this video class.