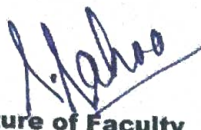


Academic Lesson Plan of Winter 2026

Department : CSE	Semester : 3rd	Name of the teaching faculty: SWARNALATA SAHOO
Subject: Algorithms	No. of days/per week class allotted . 3p/week.	Semester from : 1ST July 2026
		No. of weeks:15 weeks
		Topics to be covered:
1st week	1st	Definition of algorithm
	2nd	Criteria o f algorithms – Input/output, finiteness
	3rd	Criteria o f algorithms – definiteness, effectiveness
2nd week	1st	writing an algorithm with pseudocode
	2nd	algorithms and programs
	3rd	Revision
3rd week	1st	Concept of algorithmic complexity
	2nd	space complexity, time complexity
	3rd	worst case, average case analysis
4th week	1st	best- case analysis
	2nd	Big-O notation
	3rd	Finding the complexity of an algorithm
5th week	1st	Revision
	2nd	Concept of iteration and recursion
	3rd	examples of recursive algorithms – Fibonacci series
6th week	1st	factorial
	2nd	Tower-of-Hanoi problem
	3rd	Tower-of-Hanoi problem
7th week	1st	Complexities of recursive algorithms
	2nd	Complexities of recursive algorithms
	3rd	conversion of recursive algorithm to iterative algorithm
8th week	1st	conversion of recursive algorithm to iterative algorithm
	2nd	Revision
	3rd	Greedy
9th week	1st	Divide and Conquer
	2nd	Divide and Conquer
	3rd	Branch and Bound
10th week	1st	Branch and Bound
	2nd	Dynamic Programming and Backtracking.
	3rd	Dynamic Programming and Backtracking.
11th week	1st	The sorting problem. Bubble sort
	2nd	Selection sort, Insertion sort
	3rd	Merge sort, Quicksort
12th week	1st	Heap sort, Radix sort
	2nd	Symbol Tables, Binary Search Trees
	3rd	Balanced Search Trees. Hashing, Hash Tables.
13th week	1st	Revision
	2nd	Definition of a directed and undirected graph.
	3rd	Paths, Cycles, spanning trees
14th week	1st	Directed Acyclic Graphs.
	2nd	Topological Sorting
	3rd	Minimum Spanning Tree algorithms
15th week	1st	Shortest Path algorithms: Dijkstra's algorithm.
	2nd	Flow-based algorithms.
	3rd	Revision

COURSE OUTCOMES

CO.1	Define algorithms and describe their characteristics.
CO.2	Write algorithms using structured pseudocode.
CO.3	Implement sorting and searching algorithms using appropriate data structures.
CO.4	Analyze the time and space complexity of algorithms.
CO.5	Design solutions using advanced data structures for real-world problems such as shortest path and flow-based


Signature of Faculty


HOD, CSE