GANAPATI INSTITUTE OF ENGINEERING AND TECHNOLOGY(POLYTECHNIC)
Mathasahi , Jagatpur , Cuttack - 754200

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
LESSONPLAN

Discipline:ComputerScience & Engineering	Semester:3RD	Nameof the Faculty: RAJLAXMI SAHOO
Subject:Design Algorithm and Analysis	No.of Days/week:03	StartDate:14.07.2025 EndDate:15.11.2025

Week	ClassDay	TheoryTopics
1st	1st	Definition of algorithm, characteristics of algorithm
	2nd	Steps to write an algorithm
	3rd	Steps(contd)
2nd	1st	Examples :Addition of nos, find maximum of given nos
	2nd	Concept of algorithm complexity, Time complexity
	3rd	Space complexity, small programs to find time complexity
3rd	1st	Algorithm analysis , Best case, Worst case, Average case
	2nd	Big-O notation (some examples)
	3rd	Finding the complexity of an algorithm(best case, worst case ,average case) (using Insertion sort)
4th	1st	Finding complexity(contd)
	2nd	Concept of iteration and recursion
	3rd	Fibonacci series program
5th	1st	Factorial, Tower of Hanoi
	2nd	Complexity of recursive algorithm (substitution method)
	3rd	Complexity of recursive algorithm(iterative method)
6th	1st	Recursive algorithm(recursion method)
	2nd	Master method, Conversion of recursive algorithm to iterative algorithm
	3rd	Assignment + revision
7th	1st	Algorithm paradigm (In brief)
	2nd	Greedy method (Activity selection problem)
	3rd	Fractional knapsack problem , Huffman coding
8th	1st	Divide & conquer method (Merge sort)

	2nd	Branch and bound: Assignment problem
	3rd	Branch and Bound: Knapsack problem
9th	1st	Dnamic programming: Longest common subsequence
	2nd	Matrix chain multipliation
	3rd	BackTracking: knapsack problem
10th	1st	Backtracking: Hamiltonian Circuit problem
	2nd	Revision, Assignment
	3rd	Bubble Sort
11th	1st	Selection Sort
	2nd	Insertion Sort, Merge Sort
	3rd	Quick Sort
12th	1st	Heap sort
	2nd	Radix Sort, symbol table
	3rd	Binar search tree
13th	1st	Balanced search tree
	2nd	Hashing
	3rd	Hashing(contd.),Graph
14th	1st	Path,cycles, Spanning tree, Directed acyclic graph
	2nd	Topological sorting
	3rd	MST(Kruskal's algorithm)
15th	1st	Prim's algorithm
	2nd	Djkstra's algorithm
	3rd	Flow based algorithm

Rajlaxmi
10/7/25
Sign of faculty

S.R.Pattnaik
10.7.25
Sign of Sr. Lect.
Dept. of Computer Science & Engg

10/7/25
Sign of Principal

Principal
JIET (Polytechnic)
Jagatpur, Cuttack