

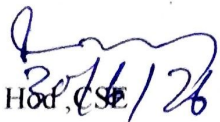
LESSON PLAN

SUB:ALGORITHM
BRANCH:- COMPUTER SCIENCE& ENGG.
SEMESTER:3RD
NAME OF FACULTY: SOUDAGAR JENA (GF in CSE)

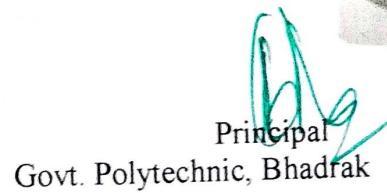


GOVERNMENT POLYTECHNIC, BHADRAK

SESSION: 2026-27


HOD, CSE

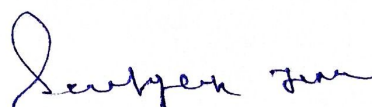

Academic Co-ordinator
Academic Co-ordinator


Principal
Govt. Polytechnic, Bhadrak

DEPARTMENT OF COMPUTER SCIENCE & ENGG.,

Discipline: Computer Sc. & Engg.	Semester: 3rd	Name of the Faculty: SOUDAGAR JENA Email ID-jenasoudagar@gmail.com
Subject: Algorithm	No. Of Days/Week Class Allotted- 3	
Week	Class Day	
1st	1st	Introduction To algorithm
	2nd	Big-O, Big-Ω, Big-Θ notation Concept of algorithm complexity Time complexity, worst case average case finding the complexity
	3rd	Big-O, Big-Ω, Big-Θ notation Concept of algorithm complexity Time complexity, worst case average case finding the complexity
2nd	1st	Introduction To algorithm
	2nd	Big-O, Big-Ω, Big-Θ notation Concept of algorithm complexity Time complexity, worst case average case finding the complexity Of an algorithm
	3rd	Steps in problem solving, flowchart, pseudo-code
3rd	1st	Concept of iteration and recursion, examples of recursive algorithms – Fibonacci series, factorial, Tower-of-Hanoi problem, Merge Sort algorithm
4th	1st	Complexities of recursive algorithms, conversion of recursive algorithm to iterative algorithm.
	2nd	Definition of a directed and undirected graph. Paths, Cycles, spanning trees, Directed Acyclic Graphs. Topological Sorting. Minimum Spanning Tree algorithms, Shortest Path algorithms:
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5th	1st	Big-O, Big-Ω, Big-Θ notation Concept of algorithm complexity Time complexity, worst case average case finding the complexity Of an algorithm
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	2nd	Big-O, Big-Ω, Big-Θ notation Concept of algorithm complexity Time complexity, worst case average case finding the complexity Of an algorithm
	3rd	Steps in problem solving, flowchart, pseudo-code Steps in problem solving, flowchart, pseudo-code Steps in problem solving, flowchart, pseudo-code
6th	1st	Concept of iteration and recursion, examples of recursive algorithms – Fibonacci series, factorial, Tower-of-Hanoi problem, Merge Sort algorithm
	2nd	Complexities of recursive algorithms, conversion of recursive algorithm to iterative algorithm. Merge Sort algorithm
	3rd	Complexities of recursive algorithms, conversion of recursive algorithm to iterative algorithm. Merge Sort algorithm
7th	1st	Complexities of recursive algorithms, conversion of recursive algorithm to iterative algorithm.
	2nd	Definition of a directed and undirected graph. Paths, Cycles, spanning trees, Directed Acyclic Graphs. Topological Sorting. Minimum Spanning Tree algorithms, Shortest Path algorithms:

	3rd	Binary Search algorithm
8th	1st	Recursive algorithms – basics
	2nd	Analysis of Divide & Conquer methods
9th	3rd	Greedy, Divide and Conquer, Branch and Bound, Dynamic Programming and Backtracking.
		Kruskal's Algorithm
	1st	Prim's Algorithm
	2nd	Dijkstra's Shortest Path Algorithm
	3rd	Greedy method – applications Limitations of Greedy approach
10th	1st	Directed Acyclic Graphs. Topological Sorting. Minimum Spanning Tree algorithms, Shortest Path algorithms: Dijkstra's algorithm. Flow-based algorithms. Dynamic Programming – concept, principle of optimality
	2nd	Difference between Greedy & Dynamic
	3rd	Example – Matrix Chain Multiplication 0/1 Knapsack Problem
11th	1st	Floyd-Warshall Algorithm
	2nd	Practice problems on DP
	3rd	Greedy method – applications Limitations of Greedy approach
12th	1st	Dynamic Programming – concept, principle of optimality
	2nd	Difference between Greedy & Dynamic
	3rd	Example – Matrix Chain Multiplication 0/1 Knapsack Problem
13th	1st	Floyd-Warshall Algorithm
	2nd	Practice problems on DP
	3rd	Preventive measures, General Safety Rules ,Personal Protection Equipment(PPE) Legislation: Intellectual Property Rights(IPR), Patents, Trademarks and copyrights
14th	1st	Features of Factories Act 1948 with Amendment(only salient points)
	2nd	Features of Payment of Wages Act 1936(only salient points)
	3rd	Smart Technology : Concept of IOT ,How IOT works Components of IOT, Characteristics of IOT, Categories of IOT
15th	1st	Applications of IOT: Smart Cities, Smart Transportation, Smart Home, Smart Healthcare
	2nd	Smart Energy Management etc.
	3rd	Quiz test Possible questions discussion


Signature of Faculty