



**Course Outcomes & CO-PO-PSO Mapping and Justification**

Subject	DESIGN AND ANALYSIS OF ALGORITHMS	18CS42
<b>COURSE OUTCOMES:</b>		
CO No.	On completion of this course, students will be able to:	Cognitive Level
18CS42.1	Understand the notion of an algorithm, asymptotic notations and divide and conquer.	L2
18CS42.2	Analyze the recursive and non-recursive algorithms and divide and conquer.	L4
18CS42.3	Understand the algorithm design techniques using greedy method.	L2
18CS42.4	Understand the algorithm design techniques using dynamic programming.	L2
18CS42.5	Explain the algorithm design techniques using backtracking, branch and bound and NP-complete and NP-hard problems.	L2

**CO-PO-PSO MAPPING**

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
18CS42.1	3	3	1	-	-	-	-	-	-	-	-	1	3	-	-
18CS42.2	2	3	1	-	-	-	-	-	-	-	-	1	3	-	-
18CS42.3	2	2	3	-	-	-	-	-	-	-	-	1	3	-	-
18CS42.4	2	2	3	-	-	-	-	-	-	-	-	1	3	-	-
18CS42.5	2	2	3	-	-	-	-	-	-	-	-	1	3	-	-
<b>Avg. Mapping</b>	<b>2.2</b>	<b>2.4</b>	<b>2.2</b>	-	-	-	-	-	-	-	-	<b>1.0</b>	<b>3.0</b>	-	-

**CO-PO-PSO JUSTIFICATION**

<b>CO No.</b>	<b>PO/PSO</b>	<b>CL</b>	<b>Justification</b>
18CS42.1	PO1	3	Strongly mapped as students will be able to gain the knowledge of asymptotic notations, divide and conquer.
	PO2	3	Strongly mapped as students will be able to analyze the algorithms of divide and conquer.
	PO3	1	Slightly mapped as students will be able to design new algorithms using divide and conquer technique.
	PO12	1	Slightly mapped as students will be able to apply the concept of divide and conquer technique in searching and sorting etc. problem types.
	PSO1	3	Strongly mapped as students will be able to apply the searching and sorting techniques in real world problems.
18CS42.2	PO1	2	Moderately mapped as students will be able to gain the knowledge of general plan of recursive and non-recursive algorithms and theory of backward substitution in divide and conquer technique.
	PO2	3	Strongly mapped as students will be able to analyze the time and space complexity of recursive and non-recursive algorithms.
	PO3	1	Slightly mapped as students will be able to design new algorithms using divide and conquer technique.
	PO12	1	Slightly mapped as students will be able to analyze the efficiency of any new algorithm designed by divide and conquer.
	PSO1	3	Strongly mapped as students will be able to apply the searching and sorting techniques in real world problems.
18CS42.3	PO1	2	Moderately mapped as students will be able to gain the knowledge of greedy method concepts.
	PO2	2	Moderately mapped as students will be able to analyze the time and space complexity of greedy algorithms.
	PO3	3	Strongly mapped as students will be able to design new algorithms using greedy technique.
	PO12	1	Slightly mapped as students will be able to analyze the efficiency of any new algorithm designed by greedy techniques.
	PSO1	3	Strongly mapped as students will be able to apply the greedy techniques in real world problems such as Resource management in software.

18CS42.4	PO1	2	Moderately mapped as students will be able to gain the knowledge of dynamic method concepts.
	PO2	2	Moderately mapped as students will be able to analyze the time and space complexity of dynamic programming algorithms.
	PO3	3	Strongly mapped as students will be able to design new algorithms using dynamic programming technique.
	PO12	1	Slightly mapped as students will be able to analyze the efficiency of any new algorithm designed by dynamic programming techniques.
	PSO1	3	Strongly mapped as students will be able to apply the dynamic programming techniques in real world problems such as TSP, reliability design.
18CS42.5	PO1	2	Moderately mapped as students will be able to gain the knowledge of backtracking, branch and bound concepts.
	PO2	2	Moderately mapped as students will be able to analyze the time and space complexity of backtracking, branch and bound algorithms.
	PO3	3	Strongly mapped as students will be able to design new algorithms using backtracking, branch and bound technique.
	PO12	1	Slightly mapped as students will be able to analyze the efficiency of any new algorithm designed by backtracking, branch and bound techniques.
	PSO1	3	Strongly mapped as students will be able to apply the backtracking, branch and bound in real world problems such as event scheduling, stratification of triangle meshes in computer graphics.

**Prepared by**

**HoD**

**Kavitha Bai A S/Vijayashree HP/Rosline Mary**

**Dr.M.Ramakrishna**