20CP209P					Design and Analysis of Algorithm LAB					
Teaching Scheme					Examination Scheme					
L	T	P	C	Hrs/Week	Theory			Practical		Total Marks
					MS	ES	IA	LW	LE/Viva	
0	0	2	1	2	-	-	-	50	50	100

COURSE OBJECTIVES

- Analyze the asymptotic performance of the algorithms
- Implement time and space efficient optimized algorithms.
- Demonstrate a familiarity with major algorithms and data structures.
- Apply important algorithmic design paradigms and methods of analysis.

LAB EXPERIMENTS

1. Program to solve the fractional knapsack using greedy approach.
2. Program to implement the MST using prim's method and kruskal's method.
3. Program to implement the Huffman coding and shortest path.
4. Program to implement the making change using greedy strategy.
5. Program to implement the binary search.
6. Program to implement the merge, quick and heap sort.
7. Program to implement the strassen's matrix multiplication.
8. Program to implement the assembly line scheduling.
9. Program to implement the chained matrix multiplication and LCS.
10. Program to implement the all pair shortest path algorithm.
11. Program to implement the 0/1 knapsack
12. Program to implement the making change using dynamic programming.
13. Program to implement the TSP using backtracking.

COURSE OUTCOMES

On completion of the course, student will be able to

CO1- Understand need of complexity analysis of the algorithm

CO2- Solve Homogenous and Inhomogeneous recurrence relations using Master Theorem, Substitution method, and Recurrence tree.

CO3- Apply Dynamic Programming, Divide and Conquer Strategy and greedy method to solve computational and graph problems.

CO4- Compare different algorithmic Strategies on efficiency parameters for optimization problems.

CO5- Evaluate Classical problems through Backtracking and Branch & Bound techniques.

CO6- Create algorithms for real time problems Design algorithms for computational problems of moderate complexity.

TEXT/REFERENCE BOOKS

1. Charles E. Leiserson, Thomas H. Cormen, Ronald L. Rivest, Clifford Stein - Introduction to Algorithms, PHI
2. Gilles Brassard & Paul Bratley, Fundamentals of Algorithmic, PHI
3. Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekharan, Fundamentals of Computer Algorithms, Galgotia.

END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks: 100 **Exam Duration: 2 Hrs**

Part A: Evaluation Based on the class performance and Laboratory book	50 Marks
Part B: Viva Examination based conducted experiments	50 Marks