

### **VISION**

To impart quality education through state-of-the-art technologies to achieve academic excellence for transforming students into innovators.

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To impart quality education through state-of-the-art technologies to achieve academic excellence for transforming students into innovators.

Creating a teaching-learning environment to produce industry ready and self-confident graduates. Motivate students to engage in creative projects throughout graduation.

To produce competitive graduates having creative skills and ethical values to succeed in their fields as well as the foundation for life-long learning.

### **PROGRAM EDUCATIONAL OBJECTIVES (PEO)**

1. To provide students with strong basic and advanced programming concepts so that they can build solutions or systems for complex problems.
2. The program provides the fundamental and perspective to attain life-long learning in the thrust areas of Computer Programming.
3. To produce graduates who have ability to pursue research or have a successful career in academia or industries or as entrepreneurs.
4. The aim is inculcating technical knowledge of the programme and imbibe ethics with moral behaviour in the graduates.

### **PROGRAM SPECIFIC OBJECTIVES (PSO)**

1. To acquire basic knowledge in hardware/software, algorithms, System Software, Computer graphics, Web design, Networking, and advanced computing for solving real-life and Research problems with the perspective of lifelong learning.
2. An ability to demonstrate Knowledge of data management systems like data acquisition and big data, Intelligent systems like AI, Data Science and Machine Learning, The techniques of data analytics like pattern recognition and knowledge discovery.
3. To develop skills which help to expand professional careers.

### **COURSE OUTCOMES (CO)**

1. To study the asymptotic performance of algorithms.
2. Apply various complexity measures and find out performance of the algorithm through divide and conquer like searching and sorting.
3. To generate optimal solutions by applying various Greedy and Dynamic algorithms.
4. To apply fundamental algorithms to model engineering problem solving using various graph methods or using suitable data structures.

<b>Name:</b>	<b>Enrolment No:</b>	<b>Semester:</b>
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Sr. No.	Definition	Date	Page No.	Signature	Remarks
01	Write a program to sort given elements of an array in ascending order using bubble sort. Analyse the time complexity for best, average, and worst case.				
02	Write a program to sort given elements of an array in ascending order using selection sort. Analyse the time complexity for best, average, and worst case.				
03	Write a program to implement heap sort.				
04	Write a program to search given element from an array using sequential search and binary search. Analyze the time complexity for best, average, and worst case.				
05	Write a program to sort given elements of an array in ascending order using merge sort. Analyze the time complexity for best, average, and worst case.				
06	Write a program to sort given elements of an array in ascending order using quick sort. Analyze the time complexity for best, average, and worst case.				
07	Write a program to implement making change problem using greedy algorithm.				
08	Write a program to implement the knapsack problem using greedy algorithm.				
09	Write a program to implement making change problem using dynamic programming.				
10	Write a program to implement the knapsack problem using dynamic programming.				
11	Write a program to implement Floyd's algorithm for finding shortest path using dynamic programming.				
12	Write a program to implement chained matrix multiplication using dynamic programming.				
13	Write a program to implement longest common subsequence using dynamic programming.				



**MADHUBEN & BHANUBHAI PATEL**  
**INSTITUTE OF TECHNOLOGY**  
(A CONSTITUENT COLLEGE OF CVM UNIVERSITY)

DEPARTMENT OF COMPUTER ENGINEERING

A.Y. 2022-23, EVEN TERM

SUBJECT CODE:102045601

SUBJECT NAME: DESIGN AND ANALYSIS OF ALGORITHMS

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