Course Outcome

Department: AIML **Semester 3** **Academic Year: 2024 -2025**

Subject Name :- Engineering Mathematics-III

CO1	Understand the concept of LT & ILT.
CO2	Solve problems related to Fourier transform to Deep Learning, Signal & Image processing.
CO3	Understand the concepts of linear algebra and apply Linear Programming, Computer Graphics and Cryptography.
CO4	Understand the concepts of PDE and apply it in data analysis.
CO5	Analyze function of complex variables.

Subject Name :- Discrete Mathematics

CO1	Apply set theory, logic, and number theory to solve basic mathematical problems.
CO2	Use functions, relations, and combinatorics to analyze discrete structures.
CO3	Apply graph concepts and algorithms to solve network-related problems.
CO4	Use tree structures and algorithms like Kruskal's and Prim's for optimization.
CO5	Understand and apply groups, rings, and Boolean algebra in computing contexts.

Subject name: Data Structures

CO1	Understand data types, ADTs, arrays, and hash tables, and analyze algorithm characteristics.
CO2	Implement stacks and queues using arrays and linked lists, and apply them in expression evaluation and recursion.
CO3	Apply singly, doubly, and circular linked lists for dynamic memory operations and efficient data management.
CO4	Use trees and graphs for data representation and apply algorithms like traversal and Warshall's algorithm.
CO5	Implement searching and sorting techniques like binary search, radix sort, and skip lists for efficient data handling.

Subject name :- Computer Architecture & Organization

CO1	Understand the theory and architecture of central processing unit.
CO2	Understand the instruction set format and its architecture
CO3	Design a simple CPU with applying the theory concepts.
CO4	Understand memory organization in computer.
CO5	Understand the architecture and functionality of central processing unit and I/O and memory organization.

Subject name :- Object - oriented Programming in C++

CO1	Understand object-oriented principles and implement classes, constructors, and objects in programs.
CO2	Apply operator overloading and inheritance concepts to create flexible and reusable code.
CO3	Implement runtime polymorphism using virtual functions, abstract classes, and dynamic binding.
CO4	Use stream classes and file operations for handling input/output and persistent data storage.
CO5	Develop generic programs using templates, manage errors using exception handling, and apply STL components.

Semester 4

Subject name : Design & Analysis of Algorithms

CO1	Understand algorithm fundamentals, design techniques, and analyze time complexity using asymptotic notations.
CO2	Apply divide and conquer strategy to solve problems like merge sort, quick sort, and matrix multiplication.
CO3	Solve complex problems using backtracking and branch-and-bound techniques for optimization and decision-making.
CO4	Use greedy methods to solve optimization problems like Huffman coding, MST, and knapsack problem.
CO5	Implement dynamic programming for optimal solutions and understand computational complexity and NP-completeness.

Subject name:- Operating Systems

CO1	Understand the fundamentals of operating systems, their types, structures, system calls, and design principles.
CO2	Analyze process management, CPU scheduling algorithms, and multithreading models for efficient execution.
CO3	Apply synchronization techniques and deadlock handling strategies to manage concurrent processes safely.
CO4	Understand memory allocation, paging, segmentation, and virtual memory concepts for efficient memory utilization.
CO5	Describe file system organization, disk scheduling, and storage management techniques for optimized I/O performance.

Subject name:- Basic Human Rights

CO1	Students will be able to understand the history of human rights.
CO2	Students will learn to respect others caste, religion, region and culture.
CO3	Students will be aware of their rights as Indian citizen.
CO4	Students will be able to understand the importance of groups and communities in the society
CO5	Students will be able to realize the philosophical and cultural basis and historical perspectives of human rights.

Subject name :- Probability and Statistics

CO1	Understand the fundamental knowledge of the concepts of probability and have knowledge of standard distributions which can describe real life phenomenon
CO2	Understand the basic concepts of one and two dimensional random variables and apply in engineering applications
CO3	Apply the concept random processes in engineering disciplines
CO4	Understand and apply the concept of correlation and spectral densities
CO5	The students will have an exposure of various distribution functions and help in acquiring skills in handling situations involving more than one variable. Able to analyze the response of random inputs to linear time invariant systems

Subject name : Digital Logic Design & Microprocessors

CO1	Student should be able to understand the theory and basic concepts of digital logic system.
CO2	Student should be able to understand concepts of combinational and Sequential circuits and systems.

CO3	Student should be able to understand concepts of fundamentals of microprocessor in computer system.
CO4	Student should be able to Understand the instruction set and programming of microprocessor.