GANDHI ACADEMY OF TECHNOLOGY AND ENGINEERING
DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

Sub: DISCRETE MATHEMATICS (Code: MCA01001)
will be able to:
- CO_1: Interpret propositional and predicate logic in knowledge representation and truth verification.
- CO_2: Demonstrate the properties of integers and fundamental principle of counting in discrete structures.
- CO_3: Utilize the understandings of relations and functions and be able to determine their properties.
- CO_4: Solve the problems using the concept of graph theory and trees properties.
- CO_5: Solve problems using recurrence relations and Principle of Inclusion and Exclusion.
- CO_6: Able to formulate problems and solve recurrence relations.

Sub: COMPUTER SYSTEM ARCHITECTURE (Code: MCA01002)
Students will be able to:
- CO_1: Understand the architecture and functionality of central processing unit.
- CO_2: Analyze some of the design issues in terms of speed, technology, cost, performance.
- CO_3: Use appropriate tools to design verify and test the CPU architecture.
- CO_4: Learn the concepts of parallel processing, pipelining and inter processor communication.
- CO_5: Exemplify in a better way the I/O and memory organization.
- CO_6: Define different number systems, binary addition and subtraction, 2's complement representation and operations with this representation.

Sub: C & DATA STRUCURE (Code: MCA01003)
Students will be able to:
- CO_1: Manage I/O operations and Repeat the sequence of instructions in your C program.
- CO_2: Implement strings in your C program.
- CO_3: Apply code reusability with functions and pointers.
- CO_4: Understand the basics of file handling mechanisms.
- CO_5: Understand basic data structures such as arrays, linked lists, stacks and queues.
- CO_6: Solve problem involving graphs, trees and heaps.

Sub: OPERATING SYSTEM (Sub: MCA01004)
Students will be able to:
- CO_1: Understand the basics of operating systems like kernel,shell, types and views of operating systems.
- CO_2: Explain various memory management techniques andconcept of thrashing.
- CO_3: Use disk management and disk scheduling algorithmsfor better utilization of external memory.
- CO_4: Recognize file system interface, protection and security mechanisms. (Knowledge)
- CO_5: Distinguish between different operating systems(Comprehension).
- CO_6: Describe the various CPU scheduling algorithms and identify the design of deadlock in process (knowledge).

Sub: DATABASE ENGINEERING (Code: MCA01005)
will be able to:
- CO_1: Describe DBMS architecture, physical and logicaldatabase designs, database modeling, relational, hierarchical and network models.
- CO_2: Identify basic database storage structures and accesstechniques such as file organizations, indexing methods including B?tree, and hashing.
- CO_3: Learn and apply structured query language (SQL) fordatabase definition and database manipulation.
- CO_4: Demonstrate an understanding of normalization theoryand apply such knowledge to the normalization of a database.
- CO_5: Understand various transaction processing, concurrency control mechanisms and database protection mechanisms.

Sub: ANALYSIS AND DESIGN OF ALGORITHMS (Sub: MCA02002)
Students will be able to:
- CO_1: Analyze to find time complexity, space complexity and analyze how to divide large complex problem (analysis).
- CO_2: Construct the BFS, DFS graphs and connected components with backtracking.
- CO_3: Apply different designing methods development of algorithms using greedy method (application).
- CO_4: Apply the Dynamic programming method on the graphs for getting optimal path (application).
- CO_5: Illustrate NP-HARD and NP-COMPLETE problems using probability (comprehension).
- CO_6: Apply Branch and Bound method on the problems(application).

SUB: OBJECT ORIENTED PROGRAMMING USING JAVA (CODE: MCA02003)
Students will be able to:
- CO_1: Identify the behavior of programs involving the basics programming constructs.
- CO_2: Explain the concepts of classes, objects, methods constructors, overloading and overriding along with access controls.
- CO_3: Use the data abstraction, inheritance, polymorphism, encapsulation principles in structuring java applications.
- CO_4: Develop java programming using multithreading, files, collections with necessary exception handling.
- CO_5: Develop java programming using database concepts with necessary exception Handling.
- CO_6: Develop GUI applications using AWTs, Swings and applets.

SUB: OBJECT ORIENTED ANALYSIS & DESIGN (CODE: MCA02004)
will be able to:
- CO_1: Illustrate the Object Oriented Modeling Concepts and Class Modeling.
- CO_2: Outline Advance Class Modeling, State Modeling and Interaction Modeling.
- CO_3: Develop system using domain class model, state model and interaction model.
- CO_4: Analyze the System using interaction model, class model, state model.
- CO_5: Evaluating of System using class design, design patterns.
- CO_6: Compare and contrast various testing techniques.

Sub: COMPUTER NETWORKS (Code: MCA02001)
- CO_1: Explore the basics of Computer Networks and various protocols.
- CO_2: Identify the use of layered approach on different networks.
- CO_3: Illustrate various multiple access protocols in Medium Access Control (MAC) sub-layer.
- CO_4: Illustrate different routing algorithms.
- CO_5: Analyze the features and operations of TCP/UDP protocols.
- CO_6: Examine DNS, FTP, HTTP.

SUB: INTERNET & WEB PROGRAMMING (CODE: MCA02005)
- CO_1: Explain the history of the internet and related internet concepts that are vital in understanding web development.
- CO_2: Demonstrate the important HTML tags for designingstatic pages and separate design from content usingCascading Style sheet.
- CO_3: Understand difference between client side and server side scripting, the basics of Javascript, Event Handling etc.
- CO_4: Develop a dynamic webpage by the use of java-script and DHTML.
- CO_5: Understand the concepts of CGI and DOM.
- CO_6: Use web application development software tools i.e.PHP and XML etc. and identify the environments currently available on the market to design web sites.

SUB: SOFTWARE ENGINEERING (CODE: MCA03001)
- CO_1: Acquire strong fundamental knowledge in science, mathematics, fundamentals of computer science, software engineering and multidisciplinary engineering to begin in practice as asoftware engineer.
- CO_2: Design applicable solutions in one or more application domains using software engineeringapproaches that integrate ethical, social, legal and economic concerns.
- CO_3: Create quality software products by possessing the leadership skills as an individual or contributing to the team development and demonstrating effective and modern workingstrategies by applying both communication and negotiation management skill.
- CO_4: Apply new software models, techniques and technologies to bring out innovative and novelistic solutions for the growth of the society in all aspects and evolving into theircontinuous professional development.
- CO_5: Develop an awareness of the role and responsibilities of the professional software engineer.
- CO_6: Acquire skills to think about problems and their solutions using appropriate methods ofanalysis and design.

SUB: COMPILER DESIGN (CODE: MCA03002)
- CO_1: Describe the design of a compiler and can identify the connection of finite automata to compiler design through regular expressions and grammar.
- CO_2: Design and implement language processors by using tools to automate parts of the implementationprocess.
- CO_3: Implement major parsing techniques ranging from the recursive decent methods to the computationally more intensive LR techniques that have been used in parser generator.
- CO_4: Explain and distinguish the concepts related to semantic analysis and storage organization Used to support the runtime environment of a program.
- CO_5: Identify and discuss various machine independent and dependent code optimizationtechniques.
- CO_6: Illustrate various aspects of Code Generation.