Programme Outcome

PO1: To provide trained human resource for the IT industry.

COURSE OUTCOMES MCA

MCA 101 : Object Oriented Programming

CO1 The students develops a sound approach to problem solving using a high level programming language.
CO2 The techniques like recursion and iteration are learnt to solve a problem.
CO3 The students master the good programming practices like modularity and documentation, and use of named constants.
CO4 The student learns the use of object oriented framework using the concept of classes, inheritance, and encapsulation while programming in a language like Python.

MCA102: Systems Programming

CO1 Introduces the instruction set of 8086 micro-processor including procedures, stack, interrupt handling, and macros.
CO2 Design, write, and test moderately complicated low-level programs in assembly language using the instruction set of 8086 .

MCA 103:Statistical Techniques

CO1 To understand the various concepts and techniques related to probability, statistical testing & estimation, sampling distributions, correlations-regressions and other univariate/bivariate/multivariate statistical techniques.
CO2 Train students on emerging open source technologies like R and Python to implement various statistical techniques.
CO3 Provides an opportunity to the students to enter the field of Data Science and be ready for the demands of a Data Analyst/Scientist position.

MCA 104: Computer System Architecture

CO1 Familiarizes the students with basics of computer hardware and how software interacts with computer hardware.
CO2 Introduces how computers represent and manipulate data, computer arithmetic and conversion between different number systems.
CO3 Introduces how Boolean algebra is related to designing computer logic, through simple combinational and sequential logic circuits.
CO4 Introduces basics of Instruction Set Architecture (ISA).
CO5 Familiarize students with a simple computer with hardware design including data format, instruction format, instruction set, addressing modes, bus structure, input/output, memory, Arithmetic/Logic unit, control unit, and data, instruction and address flow.
CO6 Design combinational and sequential logic circuits, flip-flops, counters, shift registers, adders, substractor, multiplexer, demultiplexer, Arithmetic/Logic unit.
CO7 Introduces concept of memory unit and input/output architecture.

MCA 201: Data and File Structures

CO1 The student learns to implement basic data structures like stacks, queues, linked lists, trees, and graphs.
CO2 Ability to develop some simple applications, like a desk calculator using stacks.
CO3 Understanding of advanced searching methods like B-tree, B+ tree, AVL/red-black trees.
CO4 The student learns to develop a basic file system.
CO5 Ability to use standard libraries for data structures.

MCA 203: Computer Graphics

CO1 Introduces core concepts of computer graphics.
CO2 Familiarize the students with graphics concepts, including 2D and 3D transformation, clipping, splines,objects modeling, colour modeling, lighting, textures,visible surface detection.

CO3 Algorithms to design, and create computer graphics scenes.

MCA 204: Data Communication and Computer Networks

CO1 Describe how to connect machines in a network.
CO2 Describe data communication between machines at various locations.

MCA 301: Design and Analysis of Algorithms

CO2 Understand that various problem solving categories exist such as; iterative technique, divide and conquer, dynamic programming, greedy algorithms.
CO2 Analyse the strengths and weaknesses of an algorithm theoretically as well as practically.
CO3 Identify and apply an appropriate technique to design an efficient algorithm for simple problems.
CO4 Demonstrate correctness and efficiency of the algorithm.
CO5 Summarize various searching and sorting algorithms. Compare numerous solutions for a problem and realize a solution may be efficient or inefficient depending on the application at hand.

MCA302: Software Engineering

CO1 Describe software engineering layered technology and process framework.
CO2 Introduces theories, models, and techniques that provide a basis for the software development life cycle.
CO3 Introduces software testing approaches including verification and validation, static analysis, reviews, inspections, and audits.
CO4 Understanding of the role of project management including planning, scheduling, risk management, etc.
CO5 Work as an individual and/or in team to develop and deliver quality software.

MCA 303: Database Systems

CO1 Introduces the role of a database management system, basic database concepts, including the structure and operation of the relational data model.
CO2 Introduces how to apply logical database design principles, including E-R/EE-R diagrams, conversion of ER diagrams to relations.
CO3 Familiarize students with the concepts of integrity constraints, relational algebra, relational domain & tuple calculus, data normalization.
CO4 Construct simple and moderately advanced database queries using Structured Query Language (SQL).
CO5 Familiarize students with the concept of a database transaction including concurrency control, backup and recovery, and data object locking.
CO6 Design and implementation of a small database project using Oracle.

MCA 304: Automata Theory

CO1 Describe the mathematical model of machines.
CO2 Familiarize students with the concept of formal language and corresponding automaton.
CO3 Introduces the concept of ambiguity, derivations and parse tree in grammar.

MCA 401: Compiler Design

CO1 Anunderstanding of how the different phases of compiler work.
CO2 Study of lexical analysis, and various parsing techiques.
CO3 To be able to use compiler tools like lex and yacc.
CO4 To implement a simple compiler for a hypothetical machine using syntax directed translation

MCA 403: Network Programming

CO1 Introduces networked programming concepts.
CO2 Familiarizes the students with TCP/IP protocols.
CO3 Introduces client server interaction and common programming interfaces to network communication.
CO4 Design client server application using TCP/UDP Sockets.

MCA 406: Electronic Commerce

CO1 Introduces the basic business management concepts, technical concepts, legal issues, and privacy relating to E-commerce.
CO2 Provides an understanding of how E-commerce is affecting business enterprises, governments, consumers and people in general.
CO3 Describe the infrastructure needed for E-commerce and various electronic payment systems.

MCA 407: Numerical Computing

CO1 Introduces the iterative methods to find solution of polynomial and transcendental equations.
CO2 Familiarize with the methods of interpolation and curve fitting.
CO3 To be able to find the solution of linear equations using matrices.

MCA 503: Data Mining

CO1 To be able to understand the various concepts, techniques and algorithms related to supervised and unsupervised learning under the data mining subject.
CO2 Train students on emerging open source technologies like R and Python to implement various data mining algorithms.
CO3 Provides an opportunity to the students to enter the field of Data Science along with Computer Science and be ready for the demands of a Data Analyst/Scientist position.

MCA 506: Digital Image Processing and Multi-Media

CO1 Explains theoretical and practical concepts of image acquisition, enhancement, compression and segmentation.
CO2 Introduces the concept of feature extraction of segmented images.
CO3 Provides an overview of various multimedia tools.

Programme Outcomes

PO1: To develop core competence in Computer Science
PO2: To prepare the students to carry out research and development work
PO3: To prepare the students to take up a career in the IT industry.

COURSE OUTCOMES MSC

MCS 101: Design and Analysis of Algorithms

CO1 Identify and apply an appropriate technique(divide n conquer/Greedy/Dynamic Programming/Augmentation) to design an efficient algorithm for simple problems.
CO2 Analyse the strengths and weaknesses of an algorithm theoretically as well as practically.
CO3 Demonstrate correctness and efficiency of an algorithm.
CO4 Discuss the complexity of hard problems.
CO5 Understand the concept of Approximate solutions for hard problems.

MCS 102: Artificial Intelligence

CO1 To design intelligent machines/systems which act rationally and take the right decision at the right time.

MCS 105: Computational Intelligence

CO1 Covers basic techniques of computational intelligence: Neural networks, fuzzy logic, rough sets, and genetic algorithms.
CO2 Given a problem, the student should is able to choose a technique and apply it to solve the problem.

MSC 201: Compiler Design

CO1 Anunderstanding of how the different phases of compiler work
CO2 Study of lexical analysis, and various parsing techiques
CO3 To be able to use compiler tools like lex and yacc.
CO4 To implement a simple compiler for a hypothetical machine using syntax directed translation.

MCS203: Data Mining

CO1 Introduces the process of knowledge discover and tasks of Data Mining .
CO2 Familiarizes the students with basic data exploration mehods.
CO3 Emphasizes the pre-processing of data.
CO4 Understanding of the different data mining tasks and algorithms.
CO5 Practice of data mining tasks using R.

MCS 206: Numerical Computing

CO1 Introduces the iterative methods to find solution of polynomial and transcendental equations.
CO2 Familiarize with the methods of interpolation and curve fitting.
CO3 To be able to find the solution of linear equations using matrices.

MCS 207: Combinatorial Optimization

CO1 Understand the Concept of Constrained Optimization.
CO2 Learn to model real life problems as Constrained Optimization problems.
CO3 Learn the difference between the computational complexities of Linear Programs and Integer Programs.
CO4 Learn various techniques to solve LPs and their computational complexities.

CO5 Learn the use of LPs to obtain good solutions to integer programs.

MCS311: Special Topics in Data Mining -Text Mining

CO1 Introduces Text Mining.
CO2 Familiarizes the students with basic text representation models.
CO3 Introduces different types of pre-processing of text**.**
CO4 Algorithms for classification and Clustering of documents.
CO5 Practice of text mining tasks using R.

MCS 312: Special Topics in Theoretical Computer Science

CO1 Understand the concept of reduction.
CO2 Understand when one problem can be claimed to be harder than another problem.
CO3 Understand the hardness of seven classic problems.
CO4 Understand the Complexity Classes P, NP, NP-hard and NP-Complete.
CO5 Learn various techniques(Greedy, Local Search, Lp-rounding, lp-duality) to design approximation algorithms for hard problems.

MCS 316: Special Topics in Artificial Intelligence

CO1 Implementation of intelligent web based software systems capable of taking rational decisions, i.e., right decision at the right time.