DEPARTMENT OF MCA

COURSE OUTCOMES

SEMESTER – I

DISCRETE MATHEMATICAL STRUCTURES

CO#	Course Outcome
CO1	Understand about introduction of discrete mathematical structures.
CO2	Understand the Counting Techniques and Recurrence relations.
CO3	Understand about in detail about Graphs and Trees.
CO4	Understand about Boolean Algebra and Models of Computation.

MANAGEMENT ACCOUNTANCY

CO#	Course Outcome
CO1	Understand the basic concept of Principles Of Accounting and Final Accounts.
CO2	Understand about in detail about Ratio Analysis.
CO3	Understand about the concepts of Costing, Budget and Budgetary Control,Marginal Costing.
CO4	Understanding the Introduction To Computerized Accounting System.

PROGRAMMING AND DATA STRUCTURES

CO#	Course Outcome
CO1	Understand the Fundamentals and Basic concepts of C Programming.
CO2	Understand about in detail about Arrays, Functions and Pointers.
CO3	Understand the concepts of Derived Data Types and Data Structures.
CO4	Understand the concepts of Linked Lists, Trees, Graphs, Searching and Sorting.

COMPUTER ORGANISATION

CO#	Course Outcome
CO1	Understand the basics of Digital Logic Circuits and Digital Components.
CO2	Understand about the Concepts of Data Representation, Register Transfer and Micro Operations.
CO3	Understand the concept of Basic Computer Organization and Design and Central Processing Unit.
CO4	Understand about the concept of Input /Output Organization and Memory Organization.

OPERATING SYSTEMS

CO#	Course Outcome
CO1	Understand the concept of Introduction to Operating Systems and Process Management.
CO2	Understand about Process Synchronization and Deadlocks in detail.
CO3	Understand about the concept of Memory Management, File System Implementation, Mass-storage structure.
CO4	Understand the concept of Protection and Case Study.

DESIGN AND ANALYSIS OF ALGORITHMS

CO#	Course Outcome
CO1	Understand about the Asymptotic Notations, Mathematical Analysis of Non-recursive and recursive Algorithms and Selection Sort and Bubble sort, Sequential Search and Exhaustive Search.
CO2	Understand about the Divide-and-Conquer technique, Decrease-and-Conquer and Transform-and-Conquer techniques.
CO3	Understand the Optimal Binary Search Trees, The Knapsack Problem Prim's Algorithm, Kruskal's Algorithm, Dijkstra's Algorithm.
CO4	Understand about the Decision Trees, P, NP and NP- complete problems, Backtracking, Branch-and-Bound, Approximation Algorithms for NP-hard Problems.

C PROGRAMMING AND DATA STRUCTURES LAB

CO#	Course Outcome
CO1	Able to write code for different types of programs using C Programming.
CO2	Able to write code programs of Data Structures.
CO3	The students are able to write/code and own programs using C Programming.

OPERATING SYSTEMS AND COMPUTER ORGANISATION LAB

CO#	Course Outcome
CO1	The students able to write code in UNIX operating system using some basic commands.
CO2	The students able to write code some basic programs using Shell Programming.
CO3	The students are able to write/code different types of algorithms using C/C++/JAVA.
CO4	The students able to do Digital Logic Design Experiments
CO5	The students able to write 8085/86AssemblyLanguage Programs

BRIDGE COURSE(FUNDAMENTALS OF COMPUTERS)

CO#	Course Outcome
CO1	Explain the concept of input and output devices of Computers and how itworks and recognize the basic terminology used in computer programming
CO2	Able to develop techniques of writing algorithms pseudo codes and logic
CO3	Summarize the concepts of Operating Systems
CO4	Recognize the Computer networks, types of networks and topologies, networkdevices and get introduction to internet and email.

BRIDGE COURSE (FUNDAMENTALS OF COMPUTERS) LAB

CO#	Course Outcome
CO1	Understand about the internal parts of a computer, peripherals, I/O ports, connectingcables
CO2	Able to install Operating System, able to write basic command line interfacecommands on MSDOS
CO3	Know about Internet, Browsing, Email
CO4	Able to work on Office Tools such as Word processors, Spreadsheets andPresentation tools
CO5	Able to Write Algorithms, Flow Charts for simple programs in C

SEMESTER – II

COMPUTER NETWORKS

CO#	Course Outcome
CO1	Understand the basics of computer networks and Data Communication.
CO2	Understand about Data Link Layer, IEEE Standards, design issues in networks.
CO3	Understand Internet Transport Protocols and different types of protocols.
CO4	Overview of various types of Network Devices and different types of Networks.

OBJECT ORIENTED PROGRAMMING THROUGH JAVA

CO#	Course Outcome
CO1	Understand Introduction to OOP and concept of Inheritance.
CO2	Understand about Interfaces, Packages and Enumeration, Exceptions & Assertions.
CO3	Understand about Multi Threading and Applets.
CO4	Understand the concept of Event Handling and Abstract Window Toolkit.

DATABASE MANAGEMENT SYSTEMS

CO#	Course Outcome
CO1	Able to understand the Introduction of Database System, Data Modeling Using the Entity-Relationship Model.
CO2	Able to understand Relational Data Model and Relational Database Constraints, Relational Algebra and Relational Calculus, Schema Definition, Basic Constraints and Queries.
CO3	Able to understand Relational Database Design, Indexing Structures for files.
CO4	Able to understand Transaction Processing, Concurrency Control Techniques.

FORMAL LANGUAGES & AUTOMATA THEORY

CO#	Course Outcome
CO1	Understand the concept of Finite Automata and Regular Expressions, Regularsets &Regular Grammars.
CO2	Understand the concept of Context Free Grammars and Languages, Push down Automata.
CO3	Understand about Turing Machines, Universal Turing Machines andUndecidability in detail.
CO4	Understand the concept of The Propositional calculus and The Predicatecalculus.

DATA MINING CONCEPTS AND TECHNIQUES

CO#	Course Outcome
CO1	Able to understand about the overview of Data Warehouse Basic Concepts, DataWarehouse Modelling, Pre-processing.
CO2	Able to understand about the Introduction to Data Mining , Basic Statistical Descriptions of Data, Data Visualization, Measuring data Similarity and Dissimilarity.
CO3	Able to understand about the Concept Description, Generalization by AOI , Mining Frequent Patterns, Associations and Correlations, Mining Frequent Item set.
CO4	Able to understand about the Basic Concepts of Classification ,Different Methods of Classification.

INTERNET OF THINGS(Elective –I)

CO#	Course Outcome
CO1	Able to understand about the Introduction to Internet of Things, IoT Enabling Technologies, IoT Levels & Deployment Templates Domain Specific IoTs.
CO2	Able to understand about the IOT & M2M, SNMP.
CO3	Able to understand about the IoT Platforms Design Methodology.
CO4	Able to understand about the IoT Physical Devices & Endpoints.

OBJECT ORIENTED PROGRAMMING THROUGH JAVA LAB

CO#	Course Outcome
CO1	Students can able to write programs in Java using OOP.
CO2	Students can able to code programs related to real life scenario.
CO3	Students can able to code programs in Java using Inheritance and using Adapter classes.

DATABASE MANAGEMENT SYSTEMS LAB

CO#	Course Outcome
CO1	Able to write SQL queries using DDL, DML, DCL commands.
CO2	Able to write SQL queries on aggregate and conversion functions.
CO3	Able to write PL/SQL programs on exception handling, control structures.
CO4	Able to write PL/SQL programs on cursors, procedures, triggers.

SKILL DEVELOPMENT COURSE WITH PYTHON

CO#	Course Outcome
CO1	Able to understand the basics of Python Programming language.
CO2	Able to use various functions and methods of Python Programming.
CO3	Able to comprehend Multithread Programming and GUI Programming.
CO4	Able to understand Web Programming and Database Programming.

SEMESTER – III

INFORMATION SECURITY AND CRYPTOGRAPHY

CO#	Course Outcome
CO1	Able to understand the security approaches and techniques, Introduction to number theory.
CO2	Able to Symmetric key and Asymmetric key cryptographic algorithms.
CO3	Able to understand the User Authentication Mechanisms ,System security.
CO4	Able to understand the Internet Security Protocols and Network Security.

BIG DATA ANALYTICS

CO#	Course Outcome
CO1	Understand about introduction to Big Data and Hadoop.
CO2	Understand about Real Time Analytics, Map Reduce Programming.
CO3	Understand about Streaming in Spark, Machine Learning, Map Reduce Advanced Programming.
CO4	Understand about Graph Representation in Map Reduce, Graph Analytics in Spark, Programming with RDDs-Basics, Spark SQL overview.

OBJECT ORIENTED SOFTWARE ENGINEERING

CO#	Course Outcome
CO1	Able to understand about the Introduction to Object Oriented Software Engineering, Object Orientation, Requirements Engineering.
CO2	Able to understand about the Unified Modeling Language & Use Case Modeling,Class Design and Class Diagrams.
CO3	Able to understand about the Software Design and Architecture, Design Patterns.
CO4	Able to understand about the Software Testing, Software Project Management,Software Process Models.

WEB TECHNOLOGIES

CO#	Course Outcome
CO1	Understand the concept of Web Basics, Markup languages for processing, identifying, and presenting information in web pages, introduction of XML and processing of XML Data with Java.
CO2	Understand about the concept of Server side programming with Java Servlets and JS.
CO3	Understand about the concept of Server side programming with Java Servlets and JSP.
CO4	Understand about the concept of PHP language for server side scripting and able to design Web based applications.

CLOUD COMPUTING (ELECTIVE-II)

CO#	Course Outcome
CO1	Able to understand about the Cloud Computing basics, Intranet and Cloud, Services and Business Applications, Salesforce.com, Organization and Cloud Computing.
CO2	Able to understand about the Hardware and Infrastructure , Overview of Software as a Service, Overview of Industries Software plus Services, Mobiledevice Integration.
CO3	Able to understand about Developing the Applications like Google, Microsoft,Intuit QuickBase, Local Clients and thin clients.
CO4	Able to understand about the Migrating the Cloud, Cloud Services.

FOUNDATIONS OF DATA SCIENCE (ELECTIVE-III)

CO#	Course Outcome
CO1	Understand about Key concepts in data science, including tools, approaches, and application scenarios.
CO2	Understand about Topics in data collection, sampling, quality assessment and repair.
CO3	Understand about Topics in statistical analysis and machine learning.
CO4	Understand about State-of-the-art tools to build data-science applications for different types of data, including text and CSV data.

WEB TECHNOLOGIES AND OBJECT ORIENTED SOFTWARE ENGINEERING LAB

CO#	Course Outcome
CO1	Students can able to create Web pages using HTML/DHTML and using CSS in it.
CO2	Students can able to write Java Script Programs to demonstrate the working of conditional, looping statements, arrays, functions, event handling, validation controls.
CO3	Students can able to develop simple applications like client server programming using Java Script, Servlets, ASP, JSP and a web application with database connectivity.

DATA ANALYTICS LAB

CO#	Course Outcome
CO1	Able to implement data structures, generic types.
CO2	Able to setup and install Hadoop.
CO3	Able to implement file management tasks and programs in Hadoop.

INNOVATION, ENTREPRENEURSHIP AND INTELLECTUAL PROPERTY RIGHTS

CO#	Course Outcome
CO1	Able to understand Role and importance Technology developments, Innovation in Current Environment.
CO2	Able to understand Entrepreneurship and Its Evolution.
CO3	Able to understand Intellectual Property Law.
CO4	Able to understand Patent Law – Rights and Limitations.