

Name of Program: M.C.A. (Master in Computer Applications)

(2 Years)(CBCS)

Course Outcomes:

- To develop academically competent and professionally motivated personnel, equipped with objective, critical thinking, right moral and ethical values that compassionately foster the scientific temper with a sense of social responsibility.
- To develop students to become globally competent.
- Produce knowledgeable and skilled human resources which are employable in IT and ITES.
- Function competently as an individual and as a leader in multidisciplinary projects
- Apply the inherent skills with absolute focus to function as an successful entrepreneur
- Create, identify and apply appropriate techniques, resources and modern computing tools to complex computing activities.
- Understand and commit to professional ethics and cyber regulations for professional computing practices.
- Identify the need and have the ability, to engage in independent learning as a computing professional.
- Understand and apply computing, management principles to manage multidisciplinary projects

Programme Outcome:

- MCA graduates will demonstrate analytical and design skills including the ability to generate creative solutions and foster team-oriented, professionalism through effective communication in their careers.
- MCA graduates who will exhibit effective work ethics and be able to adapt to the challenges of a dynamic job environment.
- Understand, analyze and develop computer programs in the areas related to algorithms, Process and solutions for specific application development using appropriate data modelling concepts.
- Be acquainted with the contemporary issues, latest trends in technological development and thereby innovate new ideas and solutions to existing problems.
- Apply the knowledge of computer application to find solutions for real-life application
- Ability to analyze, design, develop and maintain the software application with latest technologies
- Utilize skills and knowledge for computing practice with commitment on social, ethical, cyber and legal values.
- Inculcate employability and entrepreneur skills among students who can develop customized solutions for small to large Enterprises, IT Sector and software testing, database administration, System administrator, system analyst, etc.

Course Outcomes (COs)	Program Outcomes (POs)
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		Domain Specific (PSO)				Domain Independent (PO)		
M.C.A. - Semester I								
Course Name: Advanced Java Programming		1	2	3	4	5	6	7
CO1	Facilitates in understanding the concepts of object oriented programming. Skill Enhancing through concepts like multithreading, abstraction , platform independence	M	H	M	M	M	M	H
CO2	Effective to implement platform independence, Applet programming	H	H	H	H	H	H	H
CO3	JDBC Architecture and RMI programming	H	M	M	M	H	H	H
CO4	Design Programs for JAVA Beans and Servlets	H	H	H	H	H	H	H
Course Name: Data Communication and Network								
CO1	To understand and master the fundamentals of data communications through the knowledge of data transmission concepts, media used for data communication	H	M	M	M	H	H	H
CO2	To know the different layer of OSI reference Model	H	M	M	H	H	H	H
CO3	To know the different network security Algorithms	H	H	H	H	H	H	H
CO4	To know the intrusion detection techniques and Authentication	M	M	H	H	H	H	H
Course Name: Open source Web Programming using PHP								
CO1	To become familiar with client server architecture and able to develop a web application using various technologies.	M	H	M	M	M	M	H
CO2	To understand and develop a web-based application using a framework concept	H	H	H	H	H	H	H
CO3	To gain the skills and project-based experience needed for entry into web application and development careers	H	M	M	M	H	H	H
CO4	Web page development using PHP	H	H	H	H	H	H	H
Course Name: Advanced DBMS and Administration								
CO1	Can explore efficient method for handling multiple types of data	M	M	H	H	H	H	M

CO2	Have a detailed view of handling parallel and distributed database	M	M	M	H	H	H	H
CO3	Ability to normalize the database & understand the internal data structure	M	H	H	M	H	H	H
CO4	Deep visualization of realistic data into physical Structure	M	H	H	H	H	H	H
Course Name: Software Engineering								
CO1	To Get detailed knowledge of role of software in daily basis	H	H	H	H	H	H	H
CO2	Student will be identifying different models and find out the best	H	H	H	H	H	H	H
CO3	Test the developed software for high performance and maintainability	M	H	H	H	H	H	H
CO4	Study the software measure parameters for software quality	M	H	H	H	H	H	H
Course Name: 1P1 Practical-1								
CO1	Design and program stand-alone Java Applications	H	H	H	M	M	H	H
CO2	Useful in designing web and desktop Applications	H	H	H	M	M	H	H
CO3	Analyse And Setup Protocol Designing Issues For Communication Networks	H	H	H	M	H	M	H
CO4	Web development using PHP	H	H	M	H	H	M	H
Course Name: 1P2 Practical-2								
CO1	Facilitates in creation of Data Structures and effective management of Database	H	H	H	H	H	M	H
CO2	Ability to normalize the database & understand the internal data structure	H	H	H	H	H	M	H
CO3	To implement Software prototyping for better software development	H	M	M	H	H	H	H
CO4	To acquire skills to think about problems and solution using appropriate method	H	M	M	H	H	H	H
M.C.A. - Semester II								
Course Name: C# and ASP .NET								
CO1	To study simple C# program structure	H	M	M	M	M	M	H
CO2	To write C# program for classes, arrays, struct, array of objects	M	H	H	H	H	H	H
CO3	To understand ASP.NET structure	H	M	M	M	M	M	H
CO4	Error handling, Component based programming	M	M	M	M	M	H	H
Course Name: Cloud Computing								
CO1	To become familiar with Cloud Computing and its ecosystem and learn basics of virtualization and its importance.	M	M	H	H	H	H	M

CO2	To evaluate in-depth analysis of Cloud Computing capabilities and give technical overview of Cloud Programming and Services.	M	M	M	H	H	H	H
CO3	To understand security issues in cloud computing and exposed to Ubiquitous Cloud and Internet of Things	M	H	H	M	H	H	H
CO4	To understand emerging trends in cloud computing.	M	H	H	H	H	H	H
Course Name: Computer Graphics								
CO1	Provides user interfaces, data visualization, television commercials, motion pictures	H	M	H	H	H	H	H
CO2	Hardware devices and algorithms which are necessary for improving the effectiveness, realism, and speed of picture generation	H	M	H	H	H	H	H
CO3	Three dimensional graphic algorithm are incorporated in various streams to better simulate complex interactions	H	H	H	H	M	H	H
CO4	3-d transformations, b-spline surfaces, curves, and hidden surfaces can be explored	H	H	H	H	H	M	H
Course Name: CE1-1 (Elective) Computer Architecture and Organization								
CO1	To explore the fundamentals of Computer Architecture and Organization	H	H	M	H	H	H	H
CO2	To understand the design of control unit	M	H	M	H	H	M	H
CO3	To study the concepts of memory organization and to understand various memory technologies	H	M	M	H	H	M	H
CO4	To understand the concepts of input output processing to interface various I/O devices	H	M	M	H	H	H	H
Course Name: CE1-2 (Elective) Operation Research								
CO1	Understand LPP	H	M	M	H	H	H	H
CO2	Understand Transportation problem, assignment problem	H	H	H	M	H	M	M
CO3	Study of decision theory, CPM/PERT	M	H	M	H	H	H	H
CO4	Study of queuing Theory	H	M	H	M	H	M	H
Course Name: CE1-3 (Elective) Cyber Forensics								
CO1	Understand the different types of vulnerability Scanning	M	M	H	M	H	H	H
CO2	To know the different network defense tools and web application tools	M	M	H	M	H	H	H
CO3	To understand the different types of cyber crimes and laws	M	M	H	M	H	H	H
CO4	To understand the different tools for cyber crime investigation	H	M	H	M	H	H	H

Course Name: Android Programming								
CO1	Able to develop apps based on different types of menus	H	M	M	M	M	M	H
CO2	Make decision to solve a problem using package, library and threads Handling Errors and Exceptions	M	H	H	H	H	H	H
CO3	Ability to design and develop database Applications	H	M	M	M	M	M	H
CO4	Able to design and develop mobile applications works with internet applications	M	M	M	M	M	H	H
Course Name: 2P1 Practical-1								
CO1	To write C# program for classes, arrays, struct, array of objects	H	M	M	M	M	M	H
CO2	To write ASP.NET Programs and Component based programming	M	M	M	M	M	H	H
CO3	Study the common elements in user interfaces, data visualization, television commercials, motion pictures, and many other applications	H	H	H	H	H	H	H
CO4	Explore the algorithms necessary for basic transformation with respect to computer Graphics	H	M	M	M	M	H	H
Course Name: 2P2 Practical-2								
CO1	Would gain the knowledge about inside of Computer	H	M	M	M	M	H	H
CO2	Transportation problem, LPP problem, Inventory problem	H	M	M	H	H	H	H
CO3	To develop apps based on different types of Menus	H	M	M	M	M	M	H
CO4	Design and develop mobile applications works with internet applications	M	M	M	M	M	H	H
Course Name: Project								
CO1	Select the topic for software development	H	H	H	M	H	M	H
CO2	Analysis and design of proposed system	H	H	M	H	H	L	M
CO3	Apply the known language for project programs	M	H	H	M	H	H	L
CO4	Combine the small program to make the integrated software	H	H	M	M	H	M	H
M.C.A. - Semester III								
Course Name: Big Data Analytics								
CO1	To know the structuring the big data, technology for handling the big data, Hadoop, MapReduce.	H	M	H	H	H	H	H
CO2	To understand the big data technology foundation, Storing data in databases and data warehouses.	H	M	H	H	H	H	H
CO3	To get a basic understanding of R and the various ways to create scripts and programs in	H	H	H	H	M	H	H

	R and understand some of the key constructs in R for data handling.							
CO4	To understand and appreciate how to summarize large volumes of data effectively by appropriate use of charts of different types.	H	H	H	H	H	M	H
Course Name: Data Mining								
CO1	To introduce the students, the basic concepts and techniques of Data mining and Warehousing and data pre-processing.	M	M	H	H	H	H	M
CO2	Understand association mining algorithms for discovery of frequent item patterns in large datasets and their Visualizations	M	M	M	H	H	H	H
CO3	Understand classification analysis algorithms for discovery and generation of rules in large data sets and their Visualizations	M	H	H	M	H	H	H
CO4	Understand basic and advanced clustering analysis algorithms and Visualizations in DataMining.	M	H	H	H	H	H	H
Course Name: Python Programming								
CO1	Understand the data types and structures in Python	M	H	M	M	M	M	H
CO2	Ability to understand object oriented programming concepts and write programs in python. Handling Errors and Exceptions	H	H	H	H	H	H	H
CO3	Ability to design and develop database Applications	H	M	M	M	H	H	H
CO4	Web development using Python	H	H	H	H	H	H	H
Course Name: CE2-1 (Elective) Artificial Intelligence								
CO1	Understand the various underlying concepts in Artificial Intelligence . Acquire the knowledge of search techniques used in Artificial Intelligence	H	M	M	H	H	H	H
CO2	Acquire the concepts of knowledge Representation	H	H	H	M	H	M	M
CO3	Analyze and design a real-world problem for implementation and understand the dynamic behavior of a system.	M	H	M	H	H	H	H
CO4	To understand NLP and Distributed reasoning System	H	M	H	M	H	M	H
Course Name: CE2-2 (Elective) Mobile Computing								

CO1	Helps to understand the fundamental requirements for initiating an online business	M	M	M	M	M	H	H
CO2	Helps in process of initiating and funding a start-up, e-Business or large projects	M	H	H	H	H	H	H
CO3	Necessary to describe the issue and methods of transforming an organization into an e-business	H	H	H	H	H	H	H
CO4	Provides deeper knowledge of mobile handheld devices, wireless mediums, palm OS, MANNET	H	M	M	H	H	H	H
Course Name: CE2-3 (Elective)								
Machine Learning								
CO1	To understand the different machine learning Methods	H	M	M	H	H	H	H
CO2	To understand the Multilayer Perceptron, BackPropogation algorithm, Support Vector Machine	H	H	H	M	H	M	M
CO3	To understand the machine learning with trees, different classifier	M	H	M	H	H	H	H
CO4	To understand the concept of dimensionality reduction, Graphical Methods	H	M	H	M	H	M	H
Course Name: Soft Computing								
CO1	To know the soft computing methodology, heuristic search techniques	H	M	H	H	H	H	H
CO2	To understand the Neural Network structure, different types of leaning methods	H	M	H	H	H	H	H
CO3	To understand the different methods of unsupervised learning	H	H	H	H	M	H	H
CO4	To understand the concept of Fuzzification and Defuzzification	H	H	H	H	H	M	H
Course Name: 3P1 Practical-1								
CO1	Programs in R for data analysis and Visualization	H	M	M	M	M	M	H
CO2	Programming on classification, association and clustering algorithm	M	M	M	M	M	H	H
CO3	Programming in python to design and develop database applications	H	H	H	H	H	H	H
CO4	Programming in python for Web development	H	M	M	M	M	H	H
Course Name: 3P2 Practical-2								
CO1	Programming for AI search techniques	H	M	M	M	M	H	H
CO2	Programs on Mobile Computing	H	M	M	H	H	H	H
CO3	Programs on Neural Network	H	M	M	M	M	M	H
CO4	Programs on Fuzzification and defuzzification	M	M	M	M	M	H	H

M.C.A. - Semester IV								
Course Name: Project Work								
CO1	To use the working knowledge in industry.	H	H	H	H	H	H	H
CO2	To develop software in industry for various Clients	H	H	H	H	L	H	H
CO3	To gain awareness about ethical aspects and development work.	H	H	H	H	H	H	H
CO4	Ability to plan and use adequate methods for software development	H	H	H	H	H	H	H