



TECNIA INSTITUTE OF ADVANCED STUDIES

GRADE "A" INSTITUTE

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Department of Information, Communication & Technology

Course Outcomes

MCA 1st Sem

MCA-101	Discrete Structures	CO1: Choose appropriate discrete structures and combinatorics for basic problems.
		CO2: Interpret and illustrate the basics of Group Theory
		CO3: Examine and infer mathematical logic and Boolean Algebra
		CO4: Evaluate applications of number theory
		CO5: Implement and create models for computer science problems by understanding the concepts of Graph Theory
MCA-103	Computer Networks	CO1: Explain the functions of each layer in the OSI reference model and TCP/IP protocol suite while illustrating the process of data encoding and multiplexing
		CO2: Utilize the fundamentals of data communication and networking to identify the topologies and connecting devices of networks.
		CO3: Identify and discuss the underlying concepts of IPv4 & IPv6 protocols, along with their characteristics and functionality
		CO4: Discover the appropriate MAC layer/ data link layer protocols for the given network.
		CO5: Evaluate and implement routing algorithms and multicasting
		CO6: Adapt transport and application layer protocols along with concepts of mobility and security in networks
MCA-105	Operating Systems with Linux	CO1: Explain the structure and functions of Operating Systems along with their components, types and working
		CO2: Make use of appropriate Linux commands for Memory Management, File Management and Directory Management.
		CO3: Analyze the performance of different Scheduling algorithms along with the policies for Concurrency and Deadlock management
		CO4: Elaborate the System Calls for Process management and File Management.
MCA-107	Database Management Systems	CO1: Explain the various database components, models, DBMS architecture and Database Security
		CO2: Apply relational database theory to construct algebra expression, tuple and domain relation expression for SQL queries.
		CO3: Construct advanced SQL queries on data and apply Procedural abilities through PL/SQL.

		CO5: Appraise the concepts of transaction, concurrency control and recovery in databases.
MCA-109	Object Oriented Programming and JAVA	CO1: Illustrate the Object-Oriented paradigm, Java language constructs and JVM internal architecture.
		CO2: Apply the concepts of exception handling, multithreading, and collection framework.
		CO3: Analyze the use of event handling and JFC based toolkit in creating GUI-based computing solutions
		CO4: Design database enabled client-server applications using JDBC, RMI, IIO operations, network programming and relevant concepts
		CO5: Elaborate the functional programming concepts introduced in Java 8 and beyond.
MCA-161	Computer Networks Lab.	CO1: Interpret suitable Network Simulator
		CO2: Apply network configuration skills to design specific network scenarios.
		CO3: Make use of various connecting devices and LAN connectivity to build networks.
		CO4: Simulate the working and analyze the performance of various communication protocols
		CO5: Evaluate routing in the networks and compare different routing algorithms.
		CO6: Work in teams to design networks for real life scenarios by applying the concepts of all the layered architecture
MCA-153	Operating Systems with Linux Lab.	CO1: Build the Linux operating system and configure it.
		CO2: Discover Linux commands for working with Linux Environment.
		CO3: Appraise the Process Management algorithms, Process Management system calls, Inter Process Communication and CPU Scheduling algorithms.
		CO4: Create programs using systems calls for memory management and File Management in C programming, also simulate Deadlock avoidance algorithm using C.
MCA-165	Database Management Systems Lab.	CO1: Translate an information model into a relational database schema and to implement the schema using RDBMS
		CO2: Apply advanced SQL features like views, indexes, synonyms, etc. for database management
		CO3: Analyze PL/SQL structures like functions, procedures, cursors and triggers for database applications.
		CO4: Examine database administration concepts like GRANT, REVOKE etc. through SQL commands.
		CO5: Work in teams to design solutions for real world problems/case studies by creating efficient database schema.
MCA-167	Object Oriented Programming and JAVA Lab.	CO1: Apply Object-Oriented and Java language constructs for creating Java programs.
		CO2: Make use of exception handling, multithreading, and collection framework for constructing effective solutions.

		CO3: Inspect the use of event handling and JFC based toolkit for GUI-based computing solutions.
		CO4: Design database enabled client-server applications using JDBC, RMI, I/O operations, network programming and relevant concepts.
		CO5: Elaborate the functional programming concepts introduced in Java 8 and beyond.
MCA-169	Minor Project - I	CO1: Apply acquired knowledge within the chosen technology for solution of specific problem.
		CO2: Analyze the technical aspects of the chosen project through a systematic and comprehensive approach.
		CO3: Deduct plausible solution for the technical aspects of the project.
		CO4: Work as an individual or in teams to develop the technical project.
		CO5: Create effective reports and documentation for all project related activities and solutions.

Course Outcomes (COs) of MCA

MCA 2ndSem

MCA-102	Data and File Structures	CO1: Recall different type of data structures.
		CO2: Explain the fundamentals of an Abstract Data Type (ADT).
		CO3: Apply linear and nonlinear data structures to solve real time problems.
		CO4: Appraise and determine the correct data structure for any given real-world problem.
		CO5: Create Innovative solutions for real world problems.
MCA-104	Object Oriented Software Engineering	CO1: Illustrate system modeling and architecture using UML
		CO2: Apply suitable iterative process model
		CO3: Analyze requirements with use cases.
		CO4: Appraise analysis and design artifacts.
		CO5: Create domain models for analysis phase
		CO6: Design objects solutions with patterns and architectural layers.
MCA-106	Python Programming	CO1: Demonstrate knowledge of basic programming constructs in python.
		CO2: Illustrate string handling methods and user defined functions in python
		CO3: Apply data structure primitives like lists, tuples, sets and dictionaries.
		CO4: Inspect file handling and object-oriented programming techniques.
		CO5: Evaluate and visualize the data using appropriate python libraries.
		CO6: Develop python applications with database connectivity operations.
MCA-108	Advanced Database Management Systems	CO1: Apply EER concepts and normalization for specific cases.
		CO2: Make use of query processing, query optimization and advanced transaction processing for specific problem scenarios.
		CO3: Analyze object-oriented paradigm in database design along with OODBMS and ORDBMS

		CO4: Evaluate various concurrency control mechanisms and recovery techniques for Distributed Databases
		CO5: Appraise advanced database models and their applications
		CO6: Design and create appropriate NoSQL Databases for specific applications
MCA -110	Data Warehousing and Data Mining	CO1: Relate to Data warehouse principles, components and architectures.
		CO2: Demonstrate the necessity of data pre-processing for mining applications
		CO3: Apply suitable data mining techniques to solve specific real world problems
		CO4: Compare and evaluate different data warehousing models
MCA -112	Mobile Applications Design and Development	CO1: Relate to Android OS architecture and application components
		CO2: Make use of appropriate activities and intents in Android app development
		CO3: Model GUI application design in Android using action controls, fragments and views.
		CO4: Analyze Android data storage mechanism and APIs
		CO5: Appraise iOS technology stack for mobile app development
		CO6: Design iOS applications using Swift language constructs
MCA -114	Full Stack Development	CO1: Relate the basics of Javascript (JS) and ReactJS.
		CO2: Apply the concepts of props and State Management in React JS
		CO3: Examine Redux and Router with React JS
		CO4: Appraise Node JS environment and modular development.
		CO5: Develop full stack applications using MongoDB
MCA -116	Web Technologies	CO1: Relate the fundamentals of Internet, Protocols, WWW, Webservers with HTML tags, commands of CSS and Java Script
		CO2: Build Dynamic Web Applications applying the concept of HTML, CSS and JavaScript
		CO3: Examine the working of Basic ASP.NET Web Forms (Server Controls, Validation Controls, User controls, ADO.NET, Caching, state management), AJAX and jQuery.
		CO4: Appraise ASP.Net Web Forms and ASP.NET MVC
		CO5: Create an Interactive Web Application using ASP.NET Forms, ASP.NET MVC
MCA -118	Theory of Computations	CO1: Relate to the basics of Finite State Machines
		CO2: Explain grammar and establish equivalence between grammar, languages and pushdown automata
		CO3: Solve the computational model for a given language
		CO4: Analyze Finite Automata for different regular expressions and languages.
		CO5: Estimate the optimal computing time of the given problem.
		CO6: Analyze and evaluate the decidability of the various computational problems using programming skills

MCA -122	Microprocessors	CO1: Recall various features of microprocessor, memory and I/O devices.
		CO2: Illustrate 8086 microprocessor architecture and define its bus organization including control signals.
		CO3: Apply the concepts of memory and I/O interfacing to 8086 processor.
		CO4: Explain and outline the features of advance microprocessors.
		CO5: Understand 8086 processor addressing modes, outline classification of different instructions and functions of each instruction and write programs in assembly language using 8086 instructions.
MCA -124	Embedded Systems	CO1: Recall Embedded system, architecture and the design process of an Embedded Systems.
		CO2: Explain working of different memory devices and memory management techniques.
		CO3: Identify Interrupt and interfacing of firmware with I/O and memory
		CO4: Discover basics of operating system and its types along with different task synchronization techniques
		CO5: Appraise RTOS, memory interfaces, and communication interface.
MCA -126	Information Security	CO1: Recall varied risks related to information security.
		CO2: Identify threats, vulnerabilities and countermeasures to prevent attacks on information.
		CO3: Apply risk and IT security guidelines on software security, database security, and network security and computer security audit on various types of industries.
		CO4: Inspect appropriate security requirements for proper control and security from worms, Trojans, viruses etc.
		CO5: Create user identification and authentication methods.
MCA -128	Digital Marketing	CO1: Interpret Digital Marketing preliminaries
		CO2: Build effective Digital Marketing strategies for different products and services.
		CO3: Make appropriate use of varied Digital Marketing Platforms like Email, Facebook, Twitter, YouTube, Pinterest, etc as per given scenario
		CO4: Apply and analyze the concept of Search Engine Optimization (SEO), SEM and Mobile Marketing to given scenarios.
		CO5: Analyze specific trends using Google Analytics.
		CO6: Create effective Display Ads and Search Engine Advertising.
MCA -130	Management Information System	CO1: Explain the usage of Information systems in Business and their importance.
		CO2: Identify the techniques of strategic design for Emerging IT Infrastructure
		CO3: Construct the required Information Systems in an ethical way.
		CO4: Appraise the Business Applications of Information Systems
MCA -132	Management Principles and	CO1: Recall the significance of individual differences and people skills for becoming effective, responsible and ethical managers

	Organizational Behaviour	CO2: Explain the power of groups in influencing organizational efficacy, and develop the ability to work in teams
		CO3: Understand interpersonal processes and apply strategies to enhance one's effectiveness.
		CO4: Discover effective communication channels and leadership structures that can help reinforce desired organizational culture.
		CO5: Develop leadership and creative problem solving among students.
MCA -134	Finance and Accounting	CO1: Recall the purpose and principles of accounting.
		CO2: Explain the mechanics of accounting equation to understand the inter-linkages among various financial statements.
		CO3: Build journal, ledger and trial balance and understand their importance.
		CO4: Analyze financial statements and generate the reports for purpose of decision making.
		CO5: Create inventory accounts and financial statements.
		CO6: Elaborate the financial system, functions of various participants and type operations to apply knowledge in that area
MCA -162	Data and File Structures Lab.	CO1: Illustrate basic data structures- arrays and linked lists.
		CO2: Build stacks and queues using arrays and linked lists.
		CO3: Discover sparse matrix, polynomial arithmetic, searching and sorting techniques and their applications.
		CO4: Appraise binary search tree to perform efficient search operations.
		CO5: Examine and implement graph algorithms.
		CO6: Develop an application making extensive use of binary files.
MCA -164	Object Oriented Software Engineering Lab.	CO1: Apply object-oriented software engineering concepts to a project
		CO2: Build design model diagrams for design phase
		CO3: Analyze and construct models and diagrams in analysis phase
		CO4: Appraise an advanced CASE tool
		CO5: Design and deploy a project suitably
		CO6: Work in teams to design practical solutions for real life case studies using UML.
MCA -166	Python Programming Lab	CO1: Demonstrate program creation in Python through usage of appropriate constructs and OOPs concepts.
		CO2: Apply the concepts of data structures and string functions in python program.
		CO3: Apply the concepts of file handling and exception handling.
		CO4: Evaluate and visualize the data using appropriate python libraries.
		CO5: Develop GUI based applications with database connectivity in Python.
MCA -168	Web Technologies Lab	CO1: Build Websites using HTML, CSS, Javascript primitives.
		CO2: Construct secure ASP.NET Web application using web server controls
		CO3: Appraise jQuery to build ASP.NET AJAX application.
		CO4: Work in teams to create interactive ASP.NET based Web Forms MVC based applications along with jQuery and AJAX.

MCA -170	Minor project-II	CO1: Apply acquired knowledge within the chosen technology for solution of specific real world problem.
		CO2: Analyze the technical aspects of the chosen project through a systematic comprehensive approach.
		CO3: Deduct plausible solution for the technical aspects of the project.
		CO4: Work as an individual or in teams to develop the technical project.
		CO5: Create effective reports and documentation, for all project related activities and solution

Course Outcomes (COs) of MCA
MCA 3rdSem

MCA -201	Design and Analysis of Algorithms	CO1: Demonstrate P and NP complexity classes of the problem.
		CO2: Apply the concepts of asymptotic notations to analyze the complexities of various algorithms.
		CO3: Analyze and evaluate the searching, sorting and tree-based algorithms
		CO4: Design efficient solutions using various algorithms for given problems.
		CO5: Develop innovative solutions for real-world problems using different paradigms.
MCA -203	Artificial Intelligence and Machine Learning	CO1: Define the meaning of intelligence and recall various models for knowledge representation and reasoning within an AI problem domain.
		CO2: Summarize varied learning algorithms and model selection.
		CO3: Apply the concept of learning trends and patterns from data to build an appreciation for what is involved in learning from data.
		CO4: Analyze and apply a variety of learning algorithms to data.
		CO5: Appraise AI algorithms and assess their performance. Follow standards ethical practices.
		CO6: Develop a strong foundation for a wide variety of state of the art Machine Learning algorithms.
MCA -205	Statistics and Data Analytics	CO1: Explain fundamental concepts and terminologies of statistics and data analytics
		CO2: Experiment with various measures of central tendency, dispersion, shape and their implication.
		CO3: Apply probability and probability distribution primitives.
		CO4: Examine hypothesis testing and use inferential statistics- f , F , T and Chi Square Test.
		CO5: Assess analysis of variance for specific cases
MCA -207	Enterprise Computing with JAVA	CO1: Model Java EE architectural components, Servlet creation and session management for web applications
		CO2: Inspect the fundamentals of Java Server Pages (JSP) and Struts for web-based applications.
		CO3: Appraise Hibernate Framework of JEE and apply constructs of Object Relational Mapping.

		CO4: Elaborate principles of Dependency Injection and its application in JEE.
		CO5: Design applications based on Spring Boot
MCA -209	Natural Language Processing	CO1: Relate to the existing NLP systems and determine the advantages and disadvantages of these systems.
		CO2: Demonstrate the skills of solving specific NLP tasks, as well as running experiments on textual data.
		CO3: Apply Natural Language processing (NLP) knowledge to some of its application.
		CO4: Assess and apply the available tools of NLP on various case studies.
MCA -211	Computer Graphics	CO1: Demonstrate graphics drawings with respect, to graphics primitives.
		CO2: Explain the mathematical concepts of different graphics algorithms.
		CO3: Apply 2D & 3D transformation concepts to represent images with different dimensions and shapes.
		CO4: Analyze and evaluate the concepts of projections and shading methods to obtain realistic images.
		CO5: Develop scenes with different clipping methods and transform it to graphics display device.
		CO6: Develop interactive applications using different computer graphics algorithms and animation effects.
MCA -213	Wireless Sensor Networks	CO1; Explain the underlying technology and architecture of a Wireless sensor network
		CO2: Analyze the different variants of Operating systems in wireless sensor networks
		CO3: Examine the various types of protocols in MAC layer , network layer and transport layer
		CO4: Evaluate real world problems using appropriate sensor devices.
		CO5: Design different applications for network management
MCA -215	Software Project Management	CO1: Illustrate project scheduling within time and budget
		CO2: Identify ethical issues related to software project management.
		CO3: Apply the model-based software architectures.
		CO4: Analyze how a project can be monitored, controlled and assessed.
		CO5: Evaluate risk associated with project development, and design policies to reduce risk.
		CO6: Develop an efficient project to reduce rework and labour-intensiveness.
MCA -217	Advanced Computer Architecture	CO1: Explain micro-architectural design of processors.
		CO2: Identify the meaning of Parallel Processing, its applications and associated hardware technologies.
		CO3: Distinguish between the different parallel architectures and compare their performance relative to various parameters
		CO4: Explain and evaluate the performance of different ILP methods, pipelining design / approach for a given set of instructions

		CO5: Evaluate the performance of pipelining and non-pipelining and non-pipelining environment in a processors
		CO6: Assess cache and memory related issues in multi-processors, and parallel programming
MCA-219	Distributed Systems	CO1: Explain the real life applications, architecture and model of Distributed Systems
		CO2: Analyze fundamentals of Distributed Operating Systems and its concepts like synchronization, mutual exclusion, deadlocks and shared memory
		CO3: Determine Cloud, Fog and Edge Computing, and apply adequate patterns for user -interaction with connected - objects
		CO4: Analyze, design and implement Distributed Databases.
MCA-221	Applied Cryptography	CO1: Explain the basic primitives underlying the classical and modern cryptographic techniques.
		CO2: Demonstrate how security properties are defined and proven at cryptographic level.
		CO3: Identify common attacks and cryptographic techniques to prevent them
MCA-223	Cloud Computing	CO1: Identify the importance of Cloud Computing Paradigm, Cloud Security primitives & Load Configurations.
		CO2: Model and apply the concepts of; Virtualization and Security in the cloud computing environment.
		CO3: Analyze the concept of Data Centres with Cloud Computing and examine the Use cases of various Cloud Computing Titans.
		CO4: Design & Appraise Cloud Computing based VMS and weigh the advantages & disadvantages of various proprietary
MCA-225	e-Business Systems	CO1: Define the concepts of e-business and e-commerce and the related information technology and web-based tools
		CO2: Identify Security aspects of e-business-online threats, securities protocols and understands and apply cryptographic applications for securing the e-businesses and data privacy.
		CO3: Examine various e-business models, revenue models, electronic payment systems and electronic fund transfers.
		CO4: Create effective strategies for e-business, and mobile commerce while adapting to the emerging trends in e-business.
MCA-227	Web Intelligence and Big Data	CO1: Explain the fundamentals of web intelligence and big data
		CO2: Understand issues and apply text and image pre-processing techniques to specific cases.
		CO3: Analyse the key issues in big data management and its associated applications
		CO4: Adapt Hadoop and related big data technologies such as Map Reduce, Pig and Hive in the context of big data management.
MCA-229	Flutter and Dart	CO1: Demonstrate the basic primitives in Flutter and Dart framework
		CO2: Model native platform code using Flutter and Dart

		CO3:Examine the use of widgets and interactions in application development
		CO4:Evaluate application development using the concepts of animation and interactive widgets
		CO5:Construct flutter and dart applications using customized layouts and service interactions
MCA -231	Service Oriented Architecture	CO1: Explain Service Oriented Architecture, Service Oriented Application, Big Data, Cloud and Containers
		CO2: Apply XML in Service Oriented based Solution for a given problem
		CO3: Analyze the architecture of Service Oriented solution for any given specific problem.
		CO4: AssessMicroservices based solution with other approaches.
MCA -233	Multimedia Technologies	CO1:Explain the technical aspects of multimedia systems
		CO2:Apply various file formats of audio, video and text media in different applications
		CO3: Analyze the QoS parameters of various multimedia applications through Internet.
		CO4: Evaluate different types of multimedia compression methods.
		CO5: Design interactive multimedia software applications using animations.
		CO6: Develop real-time multimedia applications using different multimedia components.
MCA -235	Internet of Things	CO1:Explain the architecture of Internet of Things
		CO2:Demonstrate the different technologies for IoTs
		CO3:Apply Python Programming skills to develop IoT application
		CO4: Analyze the architecture of Arduino and Raspberry Pi
		CO5:Create Small IoT Applications using Sensors
MCA -237	Soft Computing	CO1:Demonstrate the techniques of soft computing and their role in problem solving
		CO2:Apply various soft computing techniques in order to solve problems effectively and efficiently
		CO3: Construct neural networks that can learn from available examples and generalize to form appropriate rules for inference systems.
		CO4: Analyze Fuzzy logic and neural networks primitives like fuzzy sets, fuzzy logic and heuristics, based on human experience.
		CO5: Assess the current research problems and research methods in Soft Computing Techniques
MCA -239	Software Quality Management	CO1: Identify software quality and the varied models and approaches aimed at realizing software quality in varied software development environments.
		CO2: Discover software quality aspects and participants by improving different phases of software development.
		CO3: Analyze fundamental concepts of CASE Tools and quality metrics for specific software cases.

		CO4: Appraise varied SQA standards and costs and challenges associated with Software Quality.
MCA -241	Digital Image Processing	CO1: Relate to the digital image processing primitives and the different types of images and their application areas.
		CO2: Explain the image formation process, and the filtering techniques for image enhancement.
		CO3: Apply appropriate image processing algorithms in both the spatial and frequency domain
		CO4: Analyze types of noise and the techniques useful to remove the noise from the degraded images.
		CO5: Assess image segmentation and compression techniques for various image processing applications.
MCA -243	Compiler Design	CO1: Recall different language translation tools.
		CO2: Explain the importance of code optimization.
		CO3: Identify compiler generation tools and techniques.
		CO4: Construct compiler and its applications.
		CO5: Design a compiler for a simple programming language.
MCA -245	Parallel Computing	CO1: Define the terminology associated with parallel computing, such as efficiency and speedup
		CO2: Demonstrate different parallel architectures and inter-connect networks.
		CO3: Identify the challenges in efficient implementation of large-scale parallel applications
		CO4: Analyze the hardware and software challenges in parallelism
		CO5: Assess different parallel programming models, and algorithms
MCA -247	Numerical, and Scientific Computing	CO1: Recall finite precision computation.
		CO2: Demonstrate understanding of common numerical methods used to obtain approximate solutions to otherwise intractable mathematical problems.
		CO3: Apply Numerical analysis which has enormous applications in the field of Science and some fields of Engineering.
		CO4: Examine numerical methods for various mathematical operations and tasks.
		CO5: Analyze and evaluate the accuracy of common numerical methods.
		CO6: Assess calculation and interpretation of errors in numerical method.
MCA -249	Research Methodology	CO1: Identify how Research is done in Computer Science to improve individual Research Productivity.
		CO2: Discover the types of Experiments and Measurements possible in Research.
		CO3: Analyze the fundamental concepts of Sampling and Data Analysis.
		CO4: Develop appropriate Technical Writing Skills.
MCA -251	Operational Research	CO1: Demonstrate linear programming problems and appreciate their limitations

		CO2: Solve linear programming problems using appropriate techniques and optimization solvers, interpret the results obtained and translate solutions into directives for action.
		CO3: Solve different queuing situations and find the optimal solutions using models for different situations.
		CO4: Apply these techniques constructively to make effective business decisions.
		CO5: Examine different models of queuing theory and game theory.
		CO6: Develop mathematical skills to analyze and solve integer programming and network models arising from a wide range of applications.
MCA -253	Cyber Security and Cyber Laws	CO1: Demonstrate computer technologies, digital evidence collection, and reporting in forensic acquisition
		CO2: Apply strategies of using information as a weapon and a target.
		CO3: Identify the principles of offensive and defensive information warfare for a given context.
		CO4: Analyze the social, legal and ethical implications of information warfare.
		CO5: Appraise key terms and concepts in cyber law, intellectual property and cyber-crimes, trademarks, domain theft and Cyber Forensics.
MCA - 255	e-Content Developmen t	CO1: Relate to the meaning and standards of e- learning and e-content.
		CO2: Demonstrate instructional content designing and standardized course designing with e- content designing.
		CO3: Apply digital media for e-content development.
		CO4: Examine Content Management systems (CMS) and Learning Management Systems (LMS).
		CO5: Evaluate various authoring and publishing tools for e-content design and presentation.
MCA - 261	Design and Analysis of Algorithms Lab.	CO1: Apply logical thinking to build solutions for given problems.
		CO2: Evaluate correctness & efficiency of algorithms using inductive proofs and invariants.
		CO3: Design and perform parameter-based analysis of the searching, sorting and tree-based algorithms.
		CO4: Create and test optimal solutions for various problems.
MCA -263	Artificial intelligence	CO1: Apply heuristic search based algorithms to solve different puzzles.
		CO2: Identify reduction techniques on large datasets and reduce their dimensionality.
		CO3: Analyze the datasets for bias and apply appropriate regression techniques.
		CO4: Evaluate the learning techniques for classification.
		CO5: Implement the knowledge of inferences rules to design the knowle base.
		CO6: Create a domain specific intelligent application.

	and Machine Learning Lab.	
MCA-265	Software Project Management Lab.	CO1: Construct proposal for software project.
		CO2: Examine and schedule the working progress and budget of the project.
		CO3: Analyze and assess the Risk associated with the project.
		CO4: Estimate the resources for project development.
		CO5: Create a novel solution of project for a specific problem.
MCA-267	Flutter and Dart Lab	CO1: Construct applications with Flutter and Dart primitives
		CO2: Experiment with native Platform. code development on given case studies.
		CO3: Analyze case studies to discover interactive widget-based solutions.
		CO4: Design animated solutions using flutter and dart
		CO5: Create service based custom applications using flutter and dart.
MCA-269	Minor Project - III.	CO1: Apply acquired knowledge within the chosen technology for the solution of specific problems.
		CO2: Analyze the technical aspects of the chosen project through a systematic and comprehensive approach.
		CO3: Deduct plausible solution for the technical aspects of the project.
		CO4: Work as an individual or in teams to develop the technical project.
		CO5: Create effective reports and documentation, for all project related activities and solutions.

Course Outcomes (COs) of MCA
MCA 4thSem

MCA-202	Dissertation (Major Project)	CO1: Apply techniques, skills and modern computing tools necessary for project development.
		CO2: Apply team-skills, ethics and professional attitude in professional endeavor.
		CO3: Model overall project management through sustainable practices.
		CO4: Adapt technological changes and futuristic challenges of the contemporary world.
		CO5: Create technical documents and reports

Head of the Department
Department of Information, Communication & Technology

HoD
MCA-TIAS