

MASTER OF COMPUTER APPLICATIONS

SEM	COURSE	COURSE OUTCOMES	BLOOMS TAXONOMY
SEM I	MA4151 Applied Probability And Statistics For Computer Science Engineers	CO1: Apply the concepts of Linear Algebra to solve practical problems.	K3
		CO2: Use the ideas of probability and random variables in solving engineering problems.	K3
		CO3: Be familiar with some of the commonly encountered two dimension random variables and be equipped for a possible extension to multivariate analysis.	K3
		CO4: Use statistical tests in testing hypothesis on data.	K3
		CO5: Develop critical thinking based on empirical evidence and the scientific approach to knowledge development.	K6
	RM4151 Research Methodology And IPR	CO1: Formulate and Design research problem	K6
		CO2: Understand and Comprehend the Data Collection Methods	K2
		CO3: Perform Data analysis and acquire Insights	K2
		CO4: Understand IPR and follow research ethics	K2
		CO5: Understand and Practice Drafting and filing a Patent in research and development	K2
	MC4101 Advanced Data Structures And Algorithms	CO1: Design data structures and algorithms to solve computing problems.	K6
		CO2: Choose and implement efficient data structures and apply them to solve problems.	K3
		CO3: Design algorithms using graph structure and various string-matching algorithms to solve real-life problems.	K6
		CO4: Design one's own algorithm for an unknown problem.	K6
		CO5: Apply suitable design strategy for problem solving.	K3
	MC4102 Object Oriented Software Engineering	CO1: Design object oriented software using appropriate process models.	K6
		CO2: Differentiate software processes under waterfall and agile methodology.	K4
		CO3: Design and Develop UML diagrams for software projects.	K6
		CO4: Apply Design Patterns for a software process.	K3
		CO5: Categorize testing methods and compare different testing tools for software processes.	K4

		CO6: Analyze object oriented metrics and quality for software engineering processes.	K4
	MC4103 Python Programming	CO1: Develop algorithmic solutions to simple computational problems	K6
		CO2: Represent compound data using Python lists, tuples and dictionaries.	K3
		CO3: Read and write data from/to files in Python Programs	K1
		CO4: Structure simple Python programs using libraries, modules etc.	K6
		CO5: Structure a program by bundling related properties and behaviors into individual objects.	K6
	MC4104 Fundamentals Of Accounting	CO1: Able to understand the basic concepts of Accounting standards.	K2
		CO2: Able to understand the process of maintaining Accounts in an organization	K2
		CO3: Helps to understand and calculating the financial position of an organization	K2
		CO4: Helps to understand Financial Management concepts and its components	K2
		CO5: It helps to understand the importance of BRS and generation of various financial reports	K2
	MC4111 Advanced Data Structures And Algorithms Laboratory	CO1: Design and implement basic and advanced data structures extensively	K6
		CO2: Design algorithms using graph structures	K6
		CO3: Design and develop efficient algorithms with minimum complexity using design techniques	K6
		CO4: Develop programs using various algorithms.	K6
		CO5: Choose appropriate data structures and algorithms, understand the ADT/libraries, and use it to design algorithms for a specific problem.	K5
	MC4112 Python Programming Laboratory	CO1: Apply the Python language syntax including control statements, loops and functions to solve a wide variety of problems in mathematics and science.	K3
		CO2: Use the core data structures like lists, dictionaries, tuples and sets in Python to store, process and sort the data	K3
		CO3: Create files and perform read and write operations	K6
		CO4: Illustrate the application of python libraries.	K4
		CO5: Handle exceptions and create classes	K5

		and objects for any real time applications	
	MC4113 Communication Skills Enhancement – I	CO1: Listen and comprehend lectures in English	K1
		CO2: Articulate well and give presentations clearly	K5
		CO3: Participate in Group Discussions successfully	K6
		CO4: Communicate effectively in formal and informal writing	K6
		CO5: Write proficient essays and emails	K6
SEM II	MC4201 Full Stack Web Development	CO1: Write client side scripting HTML, CSS and JS.	K6
		CO2: Implement and architect the server side of the web application.	K4
		CO3: Implement Web Application using NodeJS.	K5
		CO4: Architect NoSQL databases with MongoDB.	K6
		CO5: Implement a full-stack Single Page Application using React, NodeJS and MongoDB and deploy on Cloud	K6
	MC4202 Advanced Database Technology	CO1: Design a distributed database system and execute distributed queries.	K6
		CO2: Manage Spatial and Temporal Database systems and implement it in corresponding applications.	K5
		CO3: Use NoSQL database systems and manipulate the data associated with it.	K3
		CO4: Design XML database systems and validate with XML schema.	K6
		CO5: Apply knowledge of information retrieval concepts on web databases.	K3
	MC4203 Cloud Computing Technologies	CO1: Use Distributed systems in Cloud Environment.	K3
		CO2: Articulate the main concepts, key technologies, strengths and limitations of Cloud computing.	K4
		CO3: Identify the Architecture, Infrastructure and delivery models of Cloud computing.	K1
		CO4: Install, choose and use the appropriate current technology for the implementation of Cloud.	K5
		CO5: Adopt Microservices and DevOps in Cloud environments.	K5
	MC4204 Mobile Application Development	CO1: Understand the basics of mobile application development frameworks and tools.	K1
		CO2: Develop a UI for mobile applications.	K6

		CO3: Design mobile applications that manage memory dynamically.	K6
		CO4: Build applications based on mobile OS like Android, iOS.	K6
		CO5: Build location based services.	K6
	MC4205 Cyber Security	CO1: Develop a set of risk and security requirements to ensure that there are no gaps in an organization's security practices.	K6
		CO2: Achieve management, operational and technical means for effective cyber security.	K5
		CO3: Audit and monitor the performance of cyber security controls.	K5
		CO4: Spot gaps in the system and devise improvements.	K5
		CO5: Identify and report vulnerabilities in the system	K1
	MC4002 Professional Ethics In It	CO1: Examine situations and to internalize the need for applying ethical principles, values to tackle various situations.	K5
		CO2: Develop a responsible attitude towards the use of computers as well as the technology.	K6
		CO3: Envision the societal impact on the products/ projects they develop in their career	K5
		CO4: Understand the code of ethics and standards of computer professionals.	K2
		CO5: Analyze professional responsibility and empower access to information in the workplace.	K4
	MC4211 Advanced Database Technology Laboratory	CO1: Design and implement advanced databases.	K6
		CO2: Use big data frameworks and tools.	K3
		CO3: Formulate complex queries using SQL.	K5
		CO4: Create an XML document and perform Xquery.	K6
		CO5: Query processing in Mobile databases using open source tools.	K5
	MC4212 Full Stack Web Development Laboratory	CO1: To implement and deploy the client side of the web application.	K4
		CO2: To develop and deploy server side applications using NodeJS.	K6
		CO3: To use Express framework in web development.	K3
		CO4: To implement and architect database systems in both NoSQL and SQL environments.	K4

		CO5: To develop a full stack single page application using React, NodeJS, and a Database and deploy using containers	K6
	MC4213 Communication Skills Enhancement– Ii	CO1: Students will be able to make presentations and participate in Group discussions with confidence.	K6
		CO2: Students will be able to perform well in the interviews.	K6
		CO3: Students will make effective presentations.	K6
SEM III	MC4301 Machine Learning	CO1: Understand about Data Preprocessing, Dimensionality reduction	K2
		CO2: Apply proper model for the given problem and use feature engineering techniques	K3
		CO3: Make use of Probability Technique to solve the given problem.	K3
		CO4: Analyze the working model and features of Decision tree	K4
		CO5: Choose and apply appropriate algorithm to learn and classify the data	K4
	MC4302 Internet Of Things	CO1: Define the infrastructure for supporting IoT deployments	K1
		CO2: Understand the usage of IoT protocols for communication between various IoT devices	K2
		CO3: Design portable IoT using Arduino/Raspberry Pi /equivalent boards.	K6
		CO4: Understand the basic concepts of security and governance as applied to IoT	K2
		CO5: Analyze and illustrate applications of IoT in real time scenarios	K4
	MC4009 Devops And Microservices	CO1: Select the Microservices design and apply the principles.	K5
		CO2: Apply Microservices in DevOps	K4
		CO3: Understand about DevOps and the common tools used in DevOps.	K2
		CO4: Develop and integrate projects using DevOps	K6
		CO5: Deploy and monitor projects using DevOps	K5
	MC4020 Data Mining And Data Warehousing Techniques	CO1: Identify data mining techniques in building intelligent model.	K1
		CO2: Illustrate association mining techniques on transactional databases.	K4
		CO3: Apply classification and clustering techniques in real world applications.	K3
		CO4: Evaluate various mining techniques on complex data objects.	K5

		CO5: Design, create and maintain data warehouses	K6
	MC4026 Software Quality And Testing	CO1: choose the software testing techniques to cater to the need of the project	K5
		CO2: identify the components of software quality assurance systems	K1
		CO3: apply various software testing strategies	K3
		CO4: design and develop software quality models	K6
		CO5: make use of statistical methods in software quality	K3
	ET4251 IOT For Smart Systems	CO1: Analyze the concepts of IoT and its present developments.	K4
		CO2: Compare and contrast different platforms and infrastructures available for IoT	K5
		CO3: Explain different protocols and communication technologies used in IoT	K1
		CO4: Analyze the big data analytic and programming of IoT	K4
		CO5: Implement IoT solutions for smart applications	K5
	MC4311 Machine Learning Laboratory	CO1: apply data preprocessing technique and explore the structure of data to prepare for predictive modeling	K3
		CO2: understand how to select and train a model and measure the performance.	K2
		CO3: apply feature selection techniques in Machine Learning	K3
		CO4: construct Bayesian Network for appropriate problem	K6
		CO5: learn about parametric and non-parametric machine Learning algorithms and implement to practical sit	K1
	MC4312 Internet Of Things Laboratory	CO1: To understand the various IoT protocols	K2
		CO2: Test and experiment different sensors for application development	K5
		CO3: To develop applications using Arduino/Raspberry Pi/ Equivalent boards.	K6
		CO4: To develop applications that would read the sensor data and post it in Cloud	K6
		CO5: Develop IOT applications with different platforms and frameworks.	K6