

MASTER OF COMPUTER SCIENCE

COURSE OUTCOMES (COs)

On completion of the course students will be able to

COURSE COMPONENT	COURSE	COURSE OUTCOME
CORE PAPER-I	THEORY OF COMPUTATION	CO1 :Understand the concepts of Automata Theory and its types. CO2 :Analyze the regular expression with properties and equivalence. CO3 :Understand and apply Context Free Grammars and Push down Automata. CO4 : Design Turing Machine for Undecidability CO5 : Analyze P and NP problems and Post Correspondence Problem.
CORE PAPER-II	J2EE PROGRAMMING	CO1 : Understand the concept of servlet and JDBC connectivity CO2 : Creating a swing application using controls and menus. CO3 : Examine the RMI technique by registering and accessing the remote objects like stubs & skeletons. CO4 : Understand the layers of networks, Streams and Threads CO5 : Apply the TCP and UDP to create the client/server communication
CORE PAPER – III	ADVANCED WEB DESIGNING	CO1 : Understand the Bootstrap Framework and Layout Components. CO2 :Examine Bootstrap with JavaScript. CO3 : Explore the knowledge of PHP with OOPS and Database using MySQL. CO4 : Analyze the Backup and Restore data with security features. CO5 : Understand PHP with AJAX and XML
CORE PRACTICAL – I	PRACTICAL – I: J2EE PROGRAMMING LAB	CO1 : Understand the concept of compiling and create HTML and Applet communication with the help of servlets. CO2 :Implement database connectivity to web applications with

		<p>the database</p> <p>CO3 :Create RMI application to access the remote object</p> <p>CO4: Apply the different swing controls and create the menu applications</p> <p>CO5: Examine the TCP, UDP techniques with client/server communication</p>
CORE PRACTICAL – II	PRACTICAL-II : ADVANCED WEB DESIGNING LAB	<p>CO1: Demonstrate the Bootstrap Framework and Layout Components.</p> <p>CO2: Implementation of Bootstrap with JQuery and XML.</p> <p>CO3: Implementation of PHP with OOPS and Database using MySQL.</p> <p>CO4: Examining Backup and Restore data with security features.</p> <p>CO5: Demonstrate PHP with AJAX and XML</p>
CORE PAPERIV	DESIGN AND ANALYSIS OF ALGORITHMS	<p>CO1: Understand the design principles of algorithm and to be able to carry out the analysis of various algorithms based on time and complexity</p> <p>CO2: Examine the different algorithm techniques and strategies.</p> <p>CO3 :Analyses how the choice of data structures and the algorithm design methods impact the performance of programs.</p> <p>CO4 :Compute the range of behaviors of algorithm and the notion of tractable and intractable problems\.</p> <p>B Identifying the different NP complete problems and also discuss the various advance topics of algorithm</p>
CORE PAPER-V	DIGITAL IMAGE PROCESSING	<p>CO1 :Understand the fundamentals and basic relationships of Image Processing.</p> <p>CO2: Analyze the types of image transformation and filtering techniques</p> <p>CO3: Explore the knowledge of Image Restoration techniques.</p> <p>CO4 :Analyze the knowledge of image compression.</p> <p>CO5: Understand the concepts of</p>

		Image segmentation Techniques
CORE PAPERVI	DATA SCIENCE USING PYTHON	CO1: Understand python basics, Lists, Tuple and mappings CO2: Examine to handle missing data in real datasets using Numpy& pandas. CO3: Create visualization of real data with Matplotlib. CO4 : Implementation of machine learning algorithm using python.. CO5: Analyze the algorithms with datasets
CORE PRACTICAL – II	PRACTICAL - III (DIGITAL IMAGE PROCESSING LAB)	CO1: Implement the color models in Image Processing.\n CO2: Examine the preprocessing techniques for image enhancement. CO3: Implement the Compression Techniques. CO4 : Compare and examining the techniques of image segmentation. CO5: Analyze the techniques of feature extraction
CORE PRACTICAL- IV	PRACTICAL - IV (DATA SCIENCE LAB)	CO1: Implement code using python programming language CO2 : Handle missing data in real datasets using Numpy& pandas. CO3: Create visualization of real data with Matplotlib. CO4: Implement machine learning algorithm using python
CORE PAPERVII	MODERN OPERATING SYSTEM	CO1 : Discuss about the multiprocessor operating system and multicomputer system processes and their communication CO2 : Understand the various components of distributed systems synchronization and deadlock algorithms. CO3: Analyse the resource management, process management and load balancing concepts in distributed systems. CO4: Explain the security environment, access controls and formal models of secure systems. CO5: Understand the study of virtualization, cloud and their case studies

CORE PAPERVIII	ADVANCED DATABASE MANAGEMENT SYSTEMS	CO1: Understand the Parallel and Distributed Architecture of relational database applications CO2: Design the object relational database applications CO3: Analyze the Multidimensional Data storage CO4: Apply the different techniques of data mining in multidimensional data storage CO5: Explore the knowledge of information retrieval and spatial data.
CORE PAPER-IX	SOFTWARE TESTING	CO1: Understanding the basic software life cycle model. Analysing different software models CO2: Understanding different types of testing and their measures of performance CO3: Learning special types of testing to be applied for real time projects CO4: Learning to plan and documenting Testing process, implementation and reports CO5: Understanding the concept of Software test automation and learning to apply software measures and metrics
CORE PRACTICAL - V	ADVANCED DATABASE MANAGEMENT SYSTEMS LAB	CO1: Create the Parallel and Distributed Architecture of relational database applications CO2 : Design the object relational database applications CO3 : Create and Analyze the Multidimensional Data storage CO4: Apply the different techniques of data mining in multidimensional data storage CO5: Create the spatial data and explore the knowledge of information retrieval
CORE PRACTICAL- VI	SOFTWARE TESTING LAB	CO1: Understand creating the test suite and manual test cases CO2: Recording and testing the user interaction with any website using selenium IDE CO3 : Writing and applying Selenium IDE commands to test

		<p>simple programs</p> <p>CO4: Writing and applying Selenium web driver commands to test simple programs</p> <p>CO5 :Creating a website and automated test suite with test cases of different types of testing</p>
ELECTIVE THEORY	INTRODUCTION TO MACHINE LEARNING	<p>CO1:{ Understand the applications of machine learning and its types.</p> <p>CO2: Comparison of Parametric and Non-Parametric Models.</p> <p>CO3: Applying Multivariate data for classification and clustering.</p> <p>CO4: Comparison of different dimensionality reduction methods</p> <p>CO5 :Demonstration of non-parametric models – Decision Tree, Neural Network, SVM Kernel.</p>
ELECTIVE THEORY	SOFT COMPUTING	<p>CO1 :Understand soft computing technologies.</p> <p>CO2 :Analyze Neural Network Model and its types.</p> <p>CO3: Compare Fuzzy Sets and Classical Relations</p> <p>CO4 :Analyze the Defuzzification process.</p> <p>CO5: Demonstration of non-parametric models – Decision Tree, Neural Network, SVM Kernel</p>
ELECTIVE THEORY	CRYPTOGRAPHY AND NETWORK SECURITY	<p>CO1: Understand the importance of security, confidentiality and integrity of the information in the network.</p> <p>CO2: Apply the techniques for the security system</p> <p>CO3: Analyze the method for the network security</p> <p>CO4: Analyze the different secured algorithms</p> <p>CO5: Examine the various network security protocols</p>
ELECTIVE THEORY	ETHICAL HACKING	<p>CO1: Describe and understand the basics of ethical hacking</p> <p>CO2: Explain social engineering and host reconnaissance.</p> <p>CO3: Analyses the network infrastructure system and avoid the hacking network hosts.</p> <p>CO4: Examine the hacking of</p>

		<p>windows and Linux operating system.</p> <p>CO5: Learn the hacking applications in mobile apps, database storage systems.</p>
ELECTIVE THEORY	MATHEMATICAL THEORY FOR COMPUTER SCIENCE	<p>CO1: Understanding the logic to enhance the analytical skills</p> <p>CO2: Learning the basic set operations and partial ordering</p> <p>CO3 :Understanding combinatorics for problem solving</p> <p>CO4: Learning and applying Graph theory concepts for problem solving</p> <p>CO5: Understanding the concept of Trees and its applications.</p>
ELECTIVE THEORY	SOCIAL NETWORK ANALYSIS	<p>CO1: Understand the concepts of Social networks and analyzing the relationship to networks.</p> <p>CO2: Understand the Graphs, sub graphs related to networks</p> <p>CO3: Understand and apply 2- mode networks and information shape networks.</p> <p>CO4: Understanding different types of network data connected with the real world.</p> <p>CO5: Design and applying the different methods of data collection in social media.</p>
ELECTIVE THEORY	CLOUD COMPUTING	<p>CO1: Describe and understand the basics of cloud computing</p> <p>CO2: Explain the cloud infrastructure</p> <p>CO3 :Analyses the cloud infrastructure system and workload strategies.</p> <p>CO4:Examine the different models of cloud services</p> <p>CO5: Learn how to manage and secure the cloud services</p>
ELECTIVE PRACTICAL	R PROGRAMMING	<p>CO1: Understand the basic elements of R.</p> <p>CO2: Explore the dataset from various sources.</p> <p>CO3: Preprocess the dataset for Data Analytics.</p> <p>CO4: Implement the data analytics using various techniques in R.</p>

		CO5: Visualize the dataset in various models.
ELECTIVE PRACTICAL	BIG DATA	CO1: Understand the basic elements of Big Data. CO2: Explore the data acquisition and filtering from various sources. CO3: Understanding RDD and Data framework CO4: Analyze the data set in Big Data CO5: Processing dataset using the concept of Map reduce
ELECTIVE PRACTICAL	WEKA TOOL	CO1: Explore the dataset from various sources. CO2: Preprocess the dataset for Data Analytics. CO3: Implement the types of classification, clustering and association models. CO4: Analyze the accuracy of the model using various techniques. CO5 : Visualize the model using different techniques
ELECTIVE PRACTICAL	CLOUD COMPUTING LAB	CO1: Understand AWS Web services include compute, Storage, databases. CO2 : Design and manage the multiple hierarchies of directory data CO3 : Create the infrastructure with auto scaling and managing the servers CO4: Create the application-specific policies to objects along different hierarchies using IAM CO5 Implement the security in data centers.
ELECTIVE PRACTICAL	FUZZY TOOL KIT	CO1: Understand the open source tools, techniques and the environment. CO2: Implement the basic concepts with existing tools. CO3: Analyze the real world problems to apply the methods CO4: Compare the existing methods for processing, CO5: Design the program to implement the real world problems.
ELECTIVE	DEEP LEARNING	CO1: Understand the open source

PRACTICAL	TOOL KIT	<p>tools, techniques and the environment.</p> <p>CO2: Implement the basic concepts with existing tools</p> <p>CO3: Analyze the real world problems to apply the methods</p> <p>CO4: Compare the existing methods for processing</p> <p>CO5: Design the program to implement the real world problems</p>
ELECTIVE PRACTICAL	MACHINE LEARNING TOOL KIT	<p>CO1 :Understand the open source tools, techniques and the environment .</p> <p>CO2: Implement the basic concepts with existing tools.</p> <p>CO3: Analyze the real world problems to apply the methods.</p> <p>CO4: Compare the existing methods for processing.</p> <p>CO5: Design the program to implement the real world problems</p>
ELECTIVE PRACTICAL	WEB APPLICATION FRAMEWORK	<p>CO1: To Learn different open source technologies to develop web application.</p> <p>CO2: Learn the basic syntax and practicing different tags</p> <p>CO3: Designing simple static web pages</p> <p>CO4: Designing interactive and responsive web pages.</p> <p>CO5: Designing a website with database connectivity.</p>
ELECTIVE PRACTICAL	NATURAL LANGUAGE PROCESSING TOOL KIT	<p>CO1: Understand the open source tools, techniques and the environment</p> <p>CO2: Implement the basic concepts with existing tools</p> <p>CO3: Analyze the real world problems to apply the methods</p> <p>CO4: Compare the existing methods for processing</p> <p>CO5: Design the program to implement the real world problems</p>
ELECTIVE PRACTICAL	ANDROID USING JAVA	<p>CO1: Implement different layouts in Android Application.</p> <p>CO2: Examine the validation using Java.</p> <p>CO3: Implement database</p>

		connectivity with SQLite. CO4: Implement the GPS Tracking System. CO5: Explore the Graphical Packages in Android Application.
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