DEPARTMENT OF COMPUTER SCIENCE

Programme: M.Sc., Computer Science

PO No.	Programme Outcomes Upon completion of the M.Sc. Degree Programme, the graduate will be able to
PO-1	comprehend Professional and ethical responsibility in Computing Profession
PO-2	understand and analyze a given problem and intent practicable computing solutions
PO-3	build software development tools for real time applications and to solve innovative research projects to challenge the society needs
PO-4	optimize various complex computing problems
PO-5	enlighten with the contemporary issues, latest trends in technological development

PSO No.	Programme Specific Outcomes Upon completion of these courses the student would
PSO-1	empower women graduates to meet global challenges through innovative Teaching-Learning methodologies
PSO-2	apply ethical and social aspects of contemporary computing technology to design and develop computing artifacts
PSO-3	nurture the graduates to possess leadership qualities, work harmoniously as a team member with effective communication skill
PSO-4	promote young students to become software professionals with sound knowledge and pursue research
PSO-5	wide improvement in their professional career through life-long learning, appreciating human values and ethics

Course Title	INFORMATION SECURITY	
CODE	23CSPC101	
CO No.	Course Outcomes	Knowledge Level
CO-1	Recall the basic of network security	K1
CO-2	Identify the various Network attacks	K3
CO-3	Define the metrics for security issues	K2
CO-4	Analyze the protocols for secured of electronic communication	K4
CO-5	Analyze the various security trends	K4

Course Title	DESIGN AND ANALYSIS OF ALGORITHMS	
CODE	23CSPC103	
CO No.	Course Outcomes	Knowledge Level
CO-1	Recall the organization and operations of data structures	K1
CO-2	Compare different algorithmic approaches, techniques and methods	K2
CO-3	Apply Greedy method to solve the problems	K3
CO-4	Analyze a given algorithm for its efficiency based on time and space it occupies and implement Dynamic Programming	K4
CO-5	Estimate the given problem with mathematical rigor to provide an algorithmic based solution	K5

Course Title	ADVANCED PYTHON PROGRAMMING	
CODE	**23CSPC102**	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Understand the core programming constructs of Python	K2
CO-2	Express proficiency in the handling of functions,strings, lists, dictionaries, tuples and sets	K2
CO-3	Applythe use of regular expressions and built-in functions to navigate the file system.	K3
CO-4	Illustration ofObject-oriented Programming concepts in Python.	K4
CO-5	Realize the power of modules like NumPy, pandas, and Altair in developing solutions to problems related to data science	K2

Course Title	DISTRIBUTED OPERATING SYSTEM	
CODE	23CSPC104	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Recall various OS architectures	K2
CO-2	Ability to utilize various type of architecture for Resource management.	K4
CO-3	Classify the implementation process management and file system	K4
CO-4	Outline the principles of various OS	K1
CO-5	Construct the process according to the complexity of a problem	K3

Course Title	RELATIONAL DATABASE MANAGEMENT SYSTEM	
CODE	23CSPC105	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Summarize the basics and fundamentals of RDBMS and concept of Entity Relationship Model in Database Applications	K2
CO-2	Make use of SQL for Database Definition and Manipulation	K3
CO-3	Demonstration of various normalization techniques and data modeling	K2
CO-4	Create a RDBMS package using PL/SQL	K4
CO-5	Classify different types of databases	K4

Course Title	DESIGN OF ALGORITHMS LAB USING PYTHON	
CODE	**23CSPCP01**	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Implement the practical knowledge on the concepts of elementary data structures	K3
CO-2	Implement the computational efficiency of the Divide and Conquer Method.	K3
CO-3	Construct programs for tree concepts	K3
CO-4	Solve problems using Greedy method and Dynamic Programming Method	K3
CO-5	ApplyBacktracking and Branch and Bound Method to solve problems	K3

Course Title	RDBMS LAB	
CODE	23CSPSP01	
CO No.	Course Outcomes	Knowledge Level
CO-1	Design multiple tables and handle queries to populate a database	K2
CO-2	Recognize the application of aggregate function, set operation and View	K3
CO-3	Analyze PL/SQL for Application development	K4
CO-4	Able to manage various error handling mechanisms	K5
CO-5	Develop a DBMS package	K5

Course Title	ADVANCED JAVA PROGRAMMAING	
CODE	23CSPC206	
CO No.	Course Outcomes	Knowledge Level
CO-1	Illustrate the concepts of polymorphism,inheritance and packages	K1
CO-2	Make use of interfaces, Multithreading and synchronization in complex applications	K3
CO-3	Demonstrate the use of AWT with event handling.	K3
CO-4	Analyze the various activities of Applets and Swing	K4
CO-5	Apply the concept of database connectivity using JDBC	K4

Course Title	DIGITAL IMAGE PROCESSING	
CODE	**23CSPC207**	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Understand the general terminology of digital image processing	K2
CO-2	Examine various types of intensity transformations and spatial filtering	K5
CO-3	Identify various degradation and restoration Process	K3
CO-4	Categorize various compression techniques and interpret image compression standards	K4
CO-5	Develop various image segmentation methods and morphological image processing	K3

Course Title	ADVANCED JAVA PROGRAMMING LAB	
CODE	23CSPCP02	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Demonstrate the concepts for object oriented programming in Java	K2
CO-2	Develop a program for Packages in java.	K3
CO-3	Construct a program for Multithreading	K3
CO-4	Solve problems using java Applet programming and Swing	K3
CO-5	Utilize Database connectivity to develop applications	K3

Course Title	PRINCIPLES OF COMPILER DESIGN	
CODE	23CSPC208	
CO No.	Course Outcomes	Knowledge Level
CO-1	Understand the various phases of compiler	K1
CO-2	Interpret a Lexical analyzer and a parser	K2
CO-3	Repharse the intermediate code to optimized form	K2
CO-4	Build the target optimized assembly code for the given three address code	K3
CO-5	Recall storage allocation and construct intermediate code for a given high level programming language	K3

Course Title	DIGITAL IMAGE PROCESSING LAB	
CODE	23CSPCP03	
CO No.	Course Outcomes	Knowledge Level
CO-1	Apply the mathematical operations of image enhancement	K2
CO-2	Design and implement filtering techniques and descriptor computations.	K5
CO-3	Implement the concepts of feature detection and contour findin algorithms.	K5
CO-4	Analyze the constraints in image processing when dealing with larger data sets.	K3
CO-5	Evaluate concepts of pseudo code and classification in real time applications.	K5

Course Title	SOFTWARE PROJECT MANAGEMENT	
CODE	**23CSPE211**	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Identify suitable software process model for software projects.	K1
CO-2	Develop software metrics for measuring and managing software processes	K2
CO-3	Understand software requirement phases	K2
CO-4	Evaluate design and development phase	K4
CO-5	Develop software metrics for measuring and managing software processes	K3

Course Title	CLOUD COMPUTING AND ITS APPLICATIONS	
CODE	**23CSPE211**	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Understand the basic concepts and key properties of cloud computing	K2
CO-2	Analyze pros and cons of cloud computing	K3
CO-3	Categorize the architecture and infrastructure of cloud computing	K3
CO-4	Label different types of cloud services such as SaaS, PaaS and IaaS	K3
CO-5	Analyze the handling of cloud computing in various web based applications	K3

Course Title	INTERNET OF THINGS	
CODE	**23CSPE231**	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Know the facts about IoT paradigm and the fundamentals of IoT technologies	K1
CO-2	Understand and realize the techniques and protocols of Internet connections.	K4
CO-3	Analyze the performance and revolution of Internet in Mobile Devices, Cloud & Sensor networks	K4
CO-4	Analyze the quality of mobile & real time networking	K4
CO-5	Apply the IoT Reference Architecture and face the challenges in real time applications	K3

Course Title	ASP.NET PROGRAMMING	
CODE	**23CSPC309**	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Understand the framework of web programming and .NET	K1-K2
CO-2	Gain knowledge of web forms and controls to create a user interface	K1-K2
CO-3	Explore the knowledge on C#.NET with its applications	K1-K3
CO-4	Access and manipulate data in a Microsoft SQL Server database by using Microsoft ADO.NET	K1-K3
CO-5	Apply advanced controls in web applications	K2-K4

Course Title	SOA AND WEB SERVICES	
CODE	**23CSPC310**	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	understand the role of XML and the web	K1
CO-2	Gain knowledge on DTD and XSLT	K1
CO-3	Understand the concepts of using Schema and DOM in XML documents	K2
CO-4	Design a simple applications using XML document	K3
CO-5	Know the basic concepts of .NET And J2EE.	K2

Course Title	MACHINE LEARNING TECHNIQUES	
CODE	**22CSPC311**	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Understand the concepts and applications of machine learning techniques and the preparation of training model	K2
CO-2	Understand the model selection process and training a model	K2
CO-3	Determine the overview of probability and its distributions	K3
CO-4	Analyze Supervised Learning Methods and Algorithms	K3
CO-5	Analyze Unsupervised Learning Methods and Algorithms	K3

Course Title	ASP.NET PROGRAMMING LAB	
CODE	**23CSPCP04**	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Implement web application using basic controls.	K3
CO-2	Skills to develop application using advanced controls.	K3
CO-3	Demonstrate the concept of flow control in C#.NET.	K4
CO-4	Illustrate the concept of Data grid and Grid View Controls.	K3
CO-5	Develop applications using XML Data Source Control.	K3

Course Title	BIG DATA AND ANALYTICS	
CODE	**23CSPE312**	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Understand the types of digital data, the characteristics of big data, the challenges and techniques of big data	K1
CO-2	Analyze Hadoop associated with Bigdata analytics	K3
CO-3	Understand and Design applications using MongoDB	K2
CO-4	Analyze the MapReduce technologies and Hive architecture associated with Bigdata analytics	K3
CO-5	Explore BigData applications by Pig	K4

Course Title	MOBILE COMPUTING	
CODE	**23CSPE322**	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Gain the knowledge about the concept of Arpanet, protocols and standards and connecting devices	K2
CO-2	Demonstrate about IP package, datagram and debugging tools	K2
CO-3	Make use of multicast routing protocol, Host Configuration and DNS operations in network management	K3
CO-4	Outline various protocols.	K2
CO-5	Analyze the application of network technologies in designated scenarios	K3

Course Title	SOFT COMPUTING	
CODE	**23CSPE332**	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Illustrate the basic concepts of AI Systems and Neural Networks	K2
CO-2	Demonstrate Back propagation Networks with different parameters and applications	K3
CO-3	Outline Fuzzy set and crisp sets with example.	K2
CO-4	Familiarize with Bio inspired algorithm.	K5
CO-5	Analyze the behavior of evolutionary computing algorithms	K5

Course Title	WEB DESIGNING LAB	
CODE	23CSPSP03	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Develop Web page	K3
CO-2	Design and validate the form	K6
CO-3	Construct a program for Student mark sheet.	K3
CO-4	Implement events and news using scroll text.	K3
CO-5	Understand the concepts of usingSchema and DOM in XML documents	K2

Course Title	R PROGRAMMING	
CODE	23CSPSP04	
CO No.	**Course Outcomes**	**Knowledge Level**
CO-1	Manipulate and demonstrate preprocessing techniques for data sets	K4
CO-2	Implement data visualizations with different types of plots	K4
CO-3	Analyze classification approaches and develop decision tree for various dataset	K5
CO-4	Perform regression analysis for a dataset	K5
CO-5	Implement clustering techniques for various dataset	K5