

## DEPARTMENT OF COMPUTER SCIENCE

### Programme: M.Sc., Computer Science

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

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

<b>Course Title</b>	<b>INFORMATION SECURITY</b>	
<b>CODE</b>	20CSPC101/18CAPE513	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	recall the basic of network security	K1
<b>CO-2</b>	identify the various Network attacks	K3
<b>CO-3</b>	define the metrics for security issues	K2
<b>CO-4</b>	analyze the protocols for secured of electronic communication	K4
<b>CO-5</b>	analyze the various security trends	K4

<b>Course Title</b>	<b>DESIGN AND ANALYSIS OF ALGORITHMS</b>	
<b>CODE</b>	18CSPC102	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Recall the organization and operations of data structures	K1
<b>CO-2</b>	Compare different algorithmic approaches, techniques and methods	K2
<b>CO-3</b>	Apply Greedy method to solve the problems	K3
<b>CO-4</b>	Analyze a given algorithm for its efficiency based on time and space it occupies and implement Dynamic Programming	K4
<b>CO-5</b>	Estimate the given problem with mathematical rigor to provide an algorithmic based solution	K5

<b>Course Title</b>	<b>PROGRAMMING USING PYTHON</b>	
<b>CODE</b>	20CSPC103	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Understand the core programming constructs of Python	K2
<b>CO-2</b>	Express proficiency in the handling of functions, strings, lists, dictionaries, tuples and sets	K2
<b>CO-3</b>	Apply the use of regular expressions and built-in functions to navigate the file system.	K3
<b>CO-4</b>	Illustration of Object-oriented Programming concepts in Python.	K4
<b>CO-5</b>	Realize the power of modules like NumPy, pandas, and Altair in developing solutions to problems related to data science	K2

<b>Course Title</b>	<b>DISTRIBUTED OPERATING SYSTEM</b>	
<b>CODE</b>	20CSPC104	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Recall various OS architectures	K2
<b>CO-2</b>	Ability to utilize various type of architecture for Resource management.	K4
<b>CO-3</b>	Classify the implementation process management and file system	K4
<b>CO-4</b>	Outline the principles of various OS	K1
<b>CO-5</b>	Construct the process according to the complexity of a problem	K3

<b>Course Title</b>	<b>RELATIONAL DATABASE MANAGEMENT SYSTEM</b>	
<b>CODE</b>	20CSPC105	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Summarize the basics and fundamentals of RDBMS and concept of Entity Relationship Model in Database Applications	K2
<b>CO-2</b>	Make use of SQL for Database Definition and Manipulation	K3
<b>CO-3</b>	Demonstration of various normalization techniques and data modeling	K2
<b>CO-4</b>	Create a RDBMS package using PL/SQL	K4
<b>CO-5</b>	Classify different types of databases	K4

<b>Course Title</b>	<b>DATA STRUCTURES USING PYTHON LAB</b>	
<b>CODE</b>	20CSPCP01	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Implement the practical knowledge on the concepts of elementary data structures	K3
<b>CO-2</b>	Implement the computational efficiency of the Divide and Conquer Method.	K3
<b>CO-3</b>	Construct programs for tree concepts	K3
<b>CO-4</b>	Solve problems using Greedy method and Dynamic Programming Method	K3
<b>CO-5</b>	Apply Backtracking and Branch and Bound Method to solve problems	K3

<b>Course Title</b>	<b>RDBMS LAB</b>	
<b>CODE</b>	18CSPSP01	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Design multiple tables and handle queries to populate a database	K2
<b>CO-2</b>	Recognize the application of aggregate function, set operation and View	K3
<b>CO-3</b>	Analyze PL/SQL for Application development	K4
<b>CO-4</b>	Able to manage various error handling mechanisms	K5
<b>CO-5</b>	Develop a DBMS package	K5

<b>Course Title</b>	<b>ADVANCED JAVA PROGRAMMAING</b>	
<b>CODE</b>	20CSPC206	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Illustrate the concepts of polymorphism ,inheritance and packages	K1
<b>CO-2</b>	Make use of interfaces, Multithreading and synchronization in complex applications	K3
<b>CO-3</b>	Demonstrate the use of AWT with event handling.	K3
<b>CO-4</b>	Analyze the various activities of Applets and Swing	K4
<b>CO-5</b>	Apply the concept of database connectivity using JDBC	K4

<b>Course Title</b>	<b>DIGITAL IMAGE PROCESSING</b>	
<b>CODE</b>	<b>18CSPC207</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Understand the general terminology of digital image processing	K2
<b>CO-2</b>	Examine various types of intensity transformations and spatial filtering	K5
<b>CO-3</b>	Identify various degradation and restoration Process	K3
<b>CO-4</b>	Categorize various compression techniques and interpret image compression standards	K4
<b>CO-5</b>	Develop various image segmentation methods and morphological image processing	K3

<b>Course Title</b>	<b>ADVANCED JAVA PROGRAMMING LAB</b>	
<b>CODE</b>	<b>20CSPP02</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Demonstrate the concepts for object oriented programming in Java	K2
<b>CO-2</b>	Develop a program for Packages in java.	K3
<b>CO-3</b>	Construct a program for Multithreading	K3
<b>CO-4</b>	Solve problems using java Applet programming and Swing	K3
<b>CO-5</b>	Utilize Database connectivity to develop applications	K3

<b>Course Title</b>	<b>MOBILE COMPUTING</b>	
<b>CODE</b>	<b>18CSPE211/18CAPE544</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Recall the concepts of Mobile Computing Architecture & intelligent network	K1
<b>CO-2</b>	Explain the working of Mobile communications	K2
<b>CO-3</b>	Gain knowledge about WAP	K4
<b>CO-4</b>	Recall the basic concepts of intelligent network	K1
<b>CO-5</b>	Analyze the security issues in mobile computing	K4

<b>Course Title</b>	<b>CLOUD COMPUTING AND ITS APPLICATIONS</b>	
<b>CODE</b>	<b>20CSPE221</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Understand the basic concepts and key properties of cloud computing	K2
<b>CO-2</b>	Analyze pros and cons of cloud computing	K3
<b>CO-3</b>	Categorize the architecture and infrastructure of cloud computing	K3
<b>CO-4</b>	Label different types of cloud services such as SaaS, PaaS and IaaS	K3
<b>CO-5</b>	Analyze the handling of cloud computing in various web based applications	K3

<b>Course Title</b>	<b>SOFT COMPUTING</b>	
<b>CODE</b>	<b>18CSPE231/18CAPE412</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Illustrate the basic concepts of AI Systems and Neural Networks	K2
<b>CO-2</b>	Demonstrate Back propagation Networks with different parameters and applications	K3
<b>CO-3</b>	Outline Fuzzy set and crisp sets with example.	K2
<b>CO-4</b>	Familiarize with Bio inspired algorithm.	K5
<b>CO-5</b>	Analyze the behavior of evolutionary computing algorithms	K5

<b>Course Title</b>	<b>INTERNET of THINGS</b>	
<b>CODE</b>	<b>18CSPE241/18CAPE533</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Know the facts about IoT paradigm and the fundamentals of IoT technologies	K1
<b>CO-2</b>	Understand and realize the techniques and protocols of Internet connections.	K4
<b>CO-3</b>	Analyze the performance and revolution of Internet in Mobile Devices, Cloud & Sensor networks	K4
<b>CO-4</b>	Analyze the quality of mobile & realtime networking	K4
<b>CO-5</b>	Apply the IoT Reference Architecture and face the challenges in realtime applications	K3



<b>Course Title</b>	<b>SOA AND WEB SERVICES</b>	
<b>CODE</b>	<b>18CSPC308</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	understand the role of XML and the web	K1
<b>CO-2</b>	Gain knowledge on DTD and XSLT	K1
<b>CO-3</b>	Understand the concepts of using Schema and DOM in XML documents	K2
<b>CO-4</b>	Design a simple applications using XML document	K3
<b>CO-5</b>	Know the basic concepts of .NET And J2EE.	K2

<b>Course Title</b>	<b>ASP.NET PROGRAMMING</b>	
<b>CODE</b>	<b>18CSPC309/ 18CAPC514</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Understand the framework of web programming and .NET	K1-K2
<b>CO-2</b>	Gain knowledge of web forms and controls to create a user interface	K1-K2
<b>CO-3</b>	Explore the knowledge on C#.NET with its applications	K1-K3
<b>CO-4</b>	Access and manipulate data in a Microsoft SQL Server database by using Microsoft ADO.NET	K1-K3
<b>CO-5</b>	Apply advanced controls in web applications	K2-K4

<b>Course Title</b>	<b>MACHINE LEARNING TECHNIQUES</b>	
<b>CODE</b>	<b>20CSPC310</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Understand the concepts and applications of machine learning techniques and associated computing methods	K2
<b>CO-2</b>	Improve and develop methods and algorithms as applicable to machine learning	K2
<b>CO-3</b>	Determine about the types of cluster concepts and nonparametric techniques	K3
<b>CO-4</b>	Evaluate regression process in kernel machines	K3
<b>CO-5</b>	Analyze the elements of model based learning	K3

<b>Course Title</b>	<b>ASP.NET PROGRAMMING LAB</b>	
<b>CODE</b>	<b>18CSPCP04/ 18CAPCP09</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Implement web application using basic controls.	K3
<b>CO-2</b>	Skills to develop application using advanced controls.	K3
<b>CO-3</b>	Demonstrate the concept of flow control in C#.NET.	K4
<b>CO-4</b>	Illustrate the concept of Data grid and Grid View Controls.	K3
<b>CO-5</b>	Develop applications using XML Data Source Control.	K3

<b>Course Title</b>	<b>SOFTWARE PROJECT MANAGEMENT</b>	
<b>CODE</b>	<b>20CSPE312/18CAPE523</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Identify suitable software process model for software projects.	K3
<b>CO-2</b>	Develop software metrics for measuring and managing software processes	K2
<b>CO-3</b>	Understand software requirement phases	K2
<b>CO-4</b>	Evaluate design and development phase	K4
<b>CO-5</b>	Develop software metrics for measuring and managing software processes	K4

<b>Course Title</b>	<b>BIG DATA AND ANALYTICS</b>	
<b>CODE</b>	<b>18CSPE322</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Understand the types of digital data, the characteristics of big data, the challenges and techniques of big data	K1
<b>CO-2</b>	Analyze Hadoop associated with Bigdata analytics	K3
<b>CO-3</b>	Understand and Design applications using MongoDB	K2
<b>CO-4</b>	Analyze the MapReduce technologies and Hive architecture associated with Bigdata analytics	K3
<b>CO-5</b>	Explore BigData applications by Pig	K4

<b>Course Title</b>	<b>PRINCIPLES OF COMPILER DESIGN</b>	
<b>CODE</b>	18CSPE332	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Understand the various phases of compiler	K1
<b>CO-2</b>	Interpret a Lexical analyzer and a parser	K2
<b>CO-3</b>	Rephrase the intermediate code to optimized form	K2
<b>CO-4</b>	Build the target optimized assembly code for the given three address code	K3
<b>CO-5</b>	Recall storage allocation and construct intermediate code for a given high level programming language	K3

<b>Course Title</b>	<b>TCP/IP</b>	
<b>CODE</b>	18CSPE342/18CAPE431	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Gain the knowledge about the concept of Arpanet, protocols and standards and connecting devices	K2
<b>CO-2</b>	Demonstrate about IP package, datagram and debugging tools	K2
<b>CO-3</b>	Make use of multicast routing protocol, Host Configuration and DNS operations in network management	K3
<b>CO-4</b>	Outline various protocols.	K2
<b>CO-5</b>	Analyze the application of network technologies in designated scenarios	K3

<b>Course Title</b>	<b>WEB DESIGNING LAB</b>	
<b>CODE</b>	18CSPSP03	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Develop Web page	K3
<b>CO-2</b>	Design and validate the form	K6
<b>CO-3</b>	Construct a program for Student mark sheet.	K3
<b>CO-4</b>	Implement events and news using scroll text.	K3
<b>CO-5</b>	Understand the concepts of using Schema and DOM in XML documents	K2

<b>Course Title</b>	<b>R PROGRAMMING</b>	
<b>CODE</b>	20CSPSP04	
<b>CO No.</b>	<b>Course Outcomes</b>	<b>Knowledge Level</b>
<b>CO-1</b>	Manipulate and demonstrate preprocessing techniques for data sets	K4
<b>CO-2</b>	Implement data visualizations with different types of plots	K4
<b>CO-3</b>	Analyze classification approaches and develop decision tree for various dataset	K5
<b>CO-4</b>	Perform regression analysis for a dataset	K5
<b>CO-5</b>	Implement clustering techniques for various dataset	K5