**DEPARTMENT OF COMPUTER APPLICATIONS**
**Programme: M.C.A., Computer Applications**

| PO No. | Programme Outcomes<br>Upon completion of the M.C.A. Degree Programme, the graduate will be able to |
|---|---|
| **PO-1** | apply knowledge of Computer fundamentals, computing specializations and domain knowledge for the perception and conceptualization of computing models from defined problems and requirements. |
| **PO-2** | understand and analyze a given problem and intend practicable computing solutions. |
| **PO-3** | Able to use the techniques, skills and recent hardware and software tools necessary for innovative software solutions. |
| **PO-4** | recognize the social, professional, cultural and ethical issues involved in the use of computer technology and give them due consideration in developing software systems. |
| **PO-5** | master fundamental project management skills, concepts and techniques, set attainable objectives and ensure positive results, meeting scope, time and budget constraints. |

| PSO No. | Programme Specific Outcomes<br>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** | practice effectively as individuals and as team members in multidisciplinary projects involving technical, managerial, economical and social constraints |
| **PSO-4** | encourage students capability to set up their own enterprise in various sectors of Computer Applications |
| **PSO-5** | prepare the students to pursue higher studies in computing and related fields and to work in the fields of teaching and research |

| Course Title | DIGITAL COMPUTER FUNDAMENTALS | |
|---|---|---|
| **CODE** | **18CAPC101** | |
| **CO No.** | **Course Outcomes** | **Knowledge Level** |
| **CO-1** | Understanding the basic concept of the number systems, logic gates | K1 |
| **CO-2** | Simplify the Boolean Functions with different methods | K2 |
| **CO-3** | Get awareness of combinational circuit | K2 |
| **CO-4** | Apply the Sequential circuits | K3 |
| **CO-5** | Understand the fundamental concepts of Registers, Counters and Memory unit | K2 |

| Course Title | PROGRAMMING IN C | |
|---|---|---|
| **CODE** | **18CAPC102** | |
| **CO No.** | **Course Outcomes** | **Knowledge Level** |
| **CO-1** | To understand the problem solving techniques using computer and basic concepts of C programming | K1 |
| **CO-2** | Apply conditional and iterative statements to write C programs | K3 |
| **CO-3** | Apply user defined functions to solve real time problems | K3 |
| **CO-4** | Make use of user defined data types including structures and unions to solve problems | K3 |
| **CO-5** | Experiment with files concept to show input and output of files and Error handling in C | K3 |

| Course Title | COMPUTER ORGANIZATION AND ARCHITECTURE | |
|---|---|---|
| **CODE** | **18CAPC103** | |
| **CO No.** | **Course Outcomes** | **Knowledge Level** |
| **CO-1** | Understand the basic concepts of computer architecture | K2 |
| **CO-2** | Ability to evaluate performance of different computer structures | K3 |
| **CO-3** | Analyzing the Parallel Processing, Pipelining techniques, Vector Processing and Array Processors and their impacts on performance | K4 |
| **CO-4** | Assess the communication and the computing possibilities of parallel system | K3 |
| **CO-5** | Analyze the difference between Memory Hierarchy | K4 |
| **Course Title** | **MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE** | |
| **CODE** | **18CAPC104** | |
| **CO No.** | **Course Outcomes** | **Knowledge Level** |
| **CO-1** | Classify the basic logical operations using truth table and properties of logic. | K2 |
| **CO-2** | Compare and construct the basic principles of graph theory, matrix representation and tress. | K3 |
| **CO-3** | Solve the problems related to distribution, measures of central tendency, correlation and regression. | K3 |
| **CO-4** | Apply the concepts and able to solve the numerical methods and linear equations. | K3 |
| **CO-5** | Analyze the topics of automata theory and its applications. | K4 |

| Course Title | C PROGRAMMING LAB | |
|---|---|---|
| **CODE** | **18CAPCP01** | |
| **CO No.** | **Course Outcomes** | **Knowledge Level** |
| **CO-1** | Distinguish different conditional and iterative statements in C | K3 |
| **CO-2** | Skills to describe arrays, strings and functions | K3 |
| **CO-3** | Demonstrate the concept of pointers and structures | K4 |
| **CO-4** | Illustrate the concept of files | K3 |
| **CO-5** | Apply numerical methods and statistics for various applications | K3 |

| Course Title | LINUX LAB (Script) | |
|---|---|---|
| **CODE** | **18CAPCP02** | |
| **CO No.** | **Course Outcomes** | **Knowledge Level** |
| **CO-1** | Identify and use linux utilities to create and manage simple file processing operations | K2 |
| **CO-2** | Design shell script using filters and pipes | K3 |
| **CO-3** | Design shell script to exhibit programming logic | K4 |
| **CO-4** | Implement conditional execution and repetitive task | K3 |

| Course Title | JAVA PROGRAMMING | |
|---|---|---|
| CODE | 18CAPC308 | |
| CO No. | Course Outcomes | Knowledge Level |
| CO-1 | Illustrate concepts of object-oriented programming with inheritance. | K2 |
| CO-2 | Describe the concept of multithreading, packages and interfaces. | K2 |
| CO-3 | Create applet and enable Multithreaded applications. | K3 |
| CO-4 | Demonstrate the use of AWT with event handling. | K3 |
| CO-5 | Illustrate the concepts of Layout Managers and SWING with event handling. | K3 |

| Course Title | ADVANCED OPERATING SYSTEM | |
|---|---|---|
| CODE | 18CSPC104/ 18CAPC309 | |
| 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 | ADVANCED RELATIONAL DATABASE MANAGEMENT SYSTEM | |
|---|---|---|
| **CODE** | **18CSPC105 / 18CAPC310** | |
| **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** | Ability to classify different types of databases. | K4 |

| Course Title | SOFTWARE ENGINEERING | |
|---|---|---|
| **CODE** | **18CAPC311** | |
| **CO No.** | **Course Outcomes** | **Knowledge Level** |
| **CO-1** | Able to build and use a model of the application to guide choices of the many trade-offs | K2 |
| **CO-2** | Developing model which is used to explain the behavior of the system and its performance | K3 |
| **CO-3** | Ability to schedule work both of his own and that of others | K3 |
| **CO-4** | Develop techniques for building software that can cope with heterogeneous platforms and execution environments | K4 |
| **CO-5** | Distinguish the strategic Approach of Software Testing and debugging. Analyze the quality of system using various metrics | K4 |

| Course Title | JAVA PROGRAMMING LAB | |
|---|---|---|
| **CODE** | **18CAPCP05** | |
| **CO No.** | **Course Outcomes** | **Knowledge Level** |
| **CO-1** | Apply class and object concepts to solve real world problems. | K4 |
| **CO-2** | Design and develop programs using interfaces and packages. | K4 |
| **CO-3** | Demonstrate the concept of multithreading and applet. | K4 |
| **CO-4** | Implement the concept of Event Handling and AWT. | K4 |
| **CO-5** | Develop applications using Layout Managers and SWING. | K4 |

| Course Title | RDBMS LAB | |
|---|---|---|
| **CODE** | **18CAPCP06** | |
| **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 | COMPUTER NETWORKS | |
|---|---|---|
| **CODE** | **18CAPC412** | |
| **CO No.** | **Course Outcomes** | **Knowledge Level** |
| **CO-1** | Outline of basic network theory and layered communication architectures. | K2 |
| **CO-2** | Understand the issues of Data link layer and the elementary data link protocols with its types. | K2 |
| **CO-3** | Classify the various Routing algorithms. | K2 |
| **CO-4** | Make use of TCP and UDP protocols in various applications. | K3 |
| **CO-5** | Categorize the Network security algorithms and its uses. | K4 |

| Course Title | DATA MINING TECHNIQUES | |
|---|---|---|
| **CODE** | **18CAPC413** | |
| **CO No.** | **Course Outcomes** | **Knowledge Level** |
| **CO-1** | Understand the concepts of data mining tasks , issues, metrics and its related concepts | K2 |
| **CO-2** | Describe the some of the statistical concepts and terminology associated with database systems and machine learning. | K2 |
| **CO-3** | Apply different methods for data classification and prediction algorithm. | K3 |
| **CO-4** | Apply different data clustering methods. | K3 |
| **CO-5** | Illustrate methods for mining frequent patterns, associations, and techniques for mining text documents | K3 |

| Course Title | DATA MINING LAB | |
|---|---|---|
| **CODE** | **18CAPCP07** | |
| **CO No.** | **Course Outcomes** | **Knowledge Level** |
| **CO-1** | Analyze the different preprocessing methods. | K4 |
| **CO-2** | Compare the different visualization techniques. | K4 |
| **CO-3** | Evaluate the different classification algorithms for bench mark dataset. | K5 |
| **CO-4** | Evaluate the different clustering algorithms for bench mark dataset. | K5 |
| **CO-5** | Implement the association rule mining and frequent item set approaches for bench mark dataset. | K5 |
| **Course Title** | **SOFTWARE TESTING LAB** | |
| **CODE** | **18CAPCP08** | |
| **CO No.** | **Course Outcomes** | **Knowledge Level** |
| **CO-1** | Apply the concept of Design Phase Testing and Program Phase Testing using win runner tool | K3 |
| **CO-2** | Implement the concept of Debugging and Acceptance Testing using win runner tool | K4 |
| **CO-3** | Apply programming skills to evaluate the test results using silk test | K3 |
| **CO-4** | Implement the concept of Unit Testing, System Testing using silk test tool | K4 |
| **CO-5** | Apply stress testing using test director | K3 |

| Course Title | ASP.NET PROGRAMMING | |
|---|---|---|
| **CODE** | **18CSPC309/ 18CAPC514** | |
| **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 | DESIGN OF INFORMATION SYSTEMS | |
|---|---|---|
| **CODE** | **18CAPC515** | |
| **CO No.** | **Course Outcomes** | **Knowledge Level** |
| **CO-1** | Understand the principles and tools of Information systems | K2 |
| **CO-2** | Understand and apply the concept of DFD and Decision Tables | K3 |
| **CO-3** | Create use case to capture requirements for a software system and class diagrams that model both the domain model and design model of a software system | K3 |
| **CO-4** | Understand and apply packages diagrams that model the dynamic aspects of a software system | K3 |
| **CO-5** | Understand and apply state and activity diagram for software system | K4 |

| Course Title | ASP.NET PROGRAMMING LAB | |
|---|---|---|
| **CODE** | **18CSPCP04/ 18CAPCP09** | |
| **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** | **INTERNET of THINGS** | |
| **CODE** | **18CSPE241/19CAPE533** | |
| **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 &realtime networking | K4 |
| **CO-5** | Apply the IoT Reference Architecture and face the challenges in realtime applications | K3 |