

Department of Computer Application

Sarojini Naidu College for Women

Name of the Academic Program: B.Sc.Honours with Computer Application

Course Code: CMAACOR01T, CMAACOR01P

Course Title: Programming Fundamental using C

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Identify the basic concept of programming. (Level 1: Remember)
CO-2:	Explain the fundamentals of C programming. (Level 2: Understand)
CO-3:	Practice and implement logic for different programming problems. (Level 3: Apply)
CO-4:	Develop programs using the structure, union, pointer and file operation (Level 5: Evaluate)

Course Code: CMAACOR02T

Course Title: Computer Fundamentals

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Describe basics of computer system and number system along with its conversions. (Level 1: Remember)
CO-2:	Explain logic gates and Boolean Algebra along with its simplification through basic laws and Karnaugh Map. (Level 2: Understand)
CO-3:	Illustrate combinational and sequential circuits. (Level 3: Apply)
CO-4:	Describe memory and various input and output devices. (Level 5: Evaluate)
CO-5:	Explain Computer Architecture and Emerging technologies. (Level 5: Evaluate)

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Name of the Academic Program: B.Sc.Honours with Computer Application

Course Code: CMAACOR03T, CMAACOR03P

Course Title: Data Structure

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Define basic data structures such as arrays and linked lists (Level 1: Remember)
CO-2:	Describe representation and functions of array and Linked List. (Level 2: Understand)
CO-3:	Use different searching and sorting techniques to solve problems (Level 3: Apply)
CO-4:	Apply algorithms for solving problems related to Stack, Queue, Circular Queue etc. (Level 3: Apply)
CO-5:	Describe the mathematical model for trees and graphs and their implementation. (Level 5: Evaluate)

Course Code: CMAACOR04T

Course Title: Computer System Architecture

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Recall number system, logic gates, boolean algebra and combinational and sequential circuits (Level 1: Remember)
CO-2:	Discuss computer organization along with addressing mode and RISC, CISC architecture (Level 2: Understand)
CO-3:	Analyze various types of cache memory mapping techniques. (Level 4: Analyze)
CO-4:	Explain various input output organization techniques along with pipelining and parallel architecture. (Level 5: Evaluate)

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Name of the Academic Program: B.Sc.Honours with Computer Application

Course Code: CMAACOR05T, CMAACOR05P

Course Title: Database Management Systems

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Identify the difference between database systems from file systems and describe each in both function and benefit. (Level 1: Remember)
CO-2:	Describe DBMS architecture, physical and logical database designs, database modeling, relational, hierarchical and network models (Level 2: Understand)
CO-3:	Demonstrate and understanding of normalization theory. (Level 2: Understand)
CO-4:	Understand various transaction processing, concurrency control mechanisms and database protection mechanisms. (Level 2: Understand)
CO-5:	Apply Structured query language (SQL) for database definition and database manipulation.. (Level 3: Apply)

Course Code: CMAACOR06T, CMAACOR06P

Course Title: Operating Systems

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Recall the basic concepts of operating systems. (Level 1: Remember)
CO-2:	Discuss different processor scheduling algorithms processor scheduling and synchronization problems (Level 2: Understand)
CO-3:	Compare different memory management techniques and the concept of thrashing. (Level 4: Analyze)
CO-4:	Describe the disk scheduling algorithms and file protection and security mechanism. (Level 5: Evaluate)
CO-5	Illustrate the case studies of Windows and Linux Operating System (Level 4: Analyze)

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Name of the Academic Program: B.Sc.Honours with Computer Application

Course Code: CMAACOR07T

Course Title: Discrete Structure

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Describe sets, relations, functions, mathematical induction and permutation and combination (Level 1: Remember)
CO-2:	Explain propositional logic, counting problems, inclusion-exclusion principle (Level 2: Understand)
CO-3:	Solve various recurrence relation and asymptotic notation problem (Level 3: Apply)
CO-4:	Illustrate the various concept of graphs and trees(Level 4: Analyze)

Course Code: CMAACOR08T, CMAACOR08P

Course Title: Multimedia Systems and Internet Technologies

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Discuss the basics of Computer Graphics along with various colour models (Level 2: Understand)
CO-2:	Explain the concept and various components of multimedia (Level 2: Understand)
CO-3:	Illustrate client server architecture and various Internet technology protocols (Level 3: Apply)
CO-4:	Design various graphics and multimedia application using animation(Level 6: create)

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Name of the Academic Program: B.Sc.Honours with Computer Application

Course Code:CMAACOR09T, CAAACOR09P

Course Title: OOP's using Java

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Identify the difference between structured programming and OOP's (Level 1: Remember)
CO-2:	Recognize the basic syntax of JAVA like conditional statements, loops, arrays etc. (Level 2: Understand)
CO-3:	Analyze various types of cache memory mapping techniques. (Level 4: Analyze)
CO-4:	Demonstrate the use of strings, packages and multithreading. (Level 3: Apply level)
CO-5:	Develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages. (Level 6: Create)
CO-6:	Construct GUY based applications using AWT controls. (Level 6: Create)

Course Code: CMAACOR010T

Course Title: Software Engineering

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Understand the concept of software and various process models (Level 2: Understand)
CO-2:	Analyze and specify software requirements. (Level 4: Analyze)
CO-3:	Estimate project planning and scheduling (Level 5: Evaluate)
CO-4:	Illustrate different types of testing strategy (Level 4: Analyze)

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Name of the Academic Program: B.Sc.Honours with Computer Application

Course Code: CMAACOR011T, CMAACOR011P

Course Title: Artificial Intelligence

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Describe Artificial Intelligence and its various applications and agent approaches. (Level 1:Remember)
CO-2:	Use different searching technique and problem solving strategies (Level 3: Apply)
CO-3:	Solve problems using various predicate logic techniques. (Level 3: Apply)
CO-4:	Explain knowledge representation and natural languages (Level 5: Evaluate)
CO-5:	Construct various AI problems using Prolog (Level 6: Create)

Course Code: CMAACOR012T

Course Title: Computer Networks

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Recall the overview of computer networks and different kind of topologies various network models. (Level 1: Remember)
CO-2:	Describe analog and digital signals and their properties along with modulation and multiplexing. (Level 2: Understand)
CO-3:	Illustrate different kinds of network models like OSI,TCP/IP model. (Level 3:Apply)
CO-4:	Categorize different LAN technologies and routing algorithms. (Level 4: Analyze)
CO-5:	Explain different application layer protocols. (Level 5: Evaluate)

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Name of the Academic Program: B.Sc.Honours with Computer Application

Course Code: CMAACOR013T, CMAACOR013P

Course Title: Design and Analysis of Algorithm

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Describe the time and space complexity of algorithms using asymptotic notations. (Level 1: Remember)
CO-2:	Discuss different algorithm design techniques. (Level 2: Understand)
CO-3:	Demonstrate a familiarity with major algorithms of sorting and searching and data structures.(Level 3: Apply)
CO-4:	Solve different string processing problems.(Level 3: Apply)

Course Code: CMAACOR014T

Course Title: Theory of Computation

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Define Language and some basic operations on Language.(Level 1: Remember)
CO-2:	Discuss NFA,DFA and its conversion and Regular expressions (Level 2: Understand)
CO-3:	Illustrate Regular Languages and its relationship with Finite Automata, Closure properties of Regular Languages . (Level 3: Apply)
CO-4:	Use of Context-Free Grammars in parse trees and Pushdown Automata. (Level 3:Apply)
CO-5:	Explain Chomsky Classification of Grammers and identification of various types of grammers, Normal forms and Turing machine. (Level 5: Evaluate)

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Name of the Academic Program: B.Sc.Honours with Computer Application

Course Code: CMAADSE01T/ CMAADSE01P

Course Title: Introduction to Data Science

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Understand the fundamentals of data science & learn the tools for building data analysis software. (Level2: Understand)
CO-2:	Write R Programs with respect to Data science using R data types, objects, loops Functions etc. (Level 3: Apply)
CO-3:	Understand statistical analysis of data, Learn Exploratory Data analysis techniques & Data Visualization. (Level2: Understand)
CO-4:	Create R Markdown Document learning the concept of reproducible computing (Level 6: Create)

Course Code: CMAADSE02T

Course Title: Visual Programming

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Understand the basic concept of event-driven programming. (Level2: Understand)
CO-2:	Understand the properties and methods associated with an object. (Level2: Understand)
CO-3:	Apply form, objects, arrays, controls including control arrays, text boxes, message boxes, dialog boxes, labels, controls, menus, frames etc. (Level 3: Apply)
CO-4:	Develop various applications including database applications using ActiveX, ADO, and ODBC. (Level 6: Create)

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Name of the Academic Program: B.Sc.Honours with Computer Application

Course Code: CMAADSE03T, CMAADSE03P

Course Title: Data Mining

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Outline the concept of Data Mining, kinds of data and patterns that can be mined, and their application areas.(Level 1: Remember)
CO-2:	Discuss the data-mining tasks like classification, regression, clustering, association mining. (Level 2: Understand)
CO-3:	Use appropriate data mining algorithms to solve practical problems. (Level 3: Apply)
CO-4:	Explain advanced mining techniques like spatial and temporal mining. (Level 5: Evaluate)

Course Code: CMAADSE04T

Information Security and Cyber Laws

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	State the need of security and their approaches to handle different types of attacks(Level 1: Remember)
CO-2:	Discuss cyber laws and crimes, nature of threats and IT .Acts and intellectual property right (Level 2 : Understand)
CO-3:	Analyze cyber security strategies in respect of cyber risk. (Level 4: Analyze)
CO-4:	Justify different encryption techniques to handle network security issues (Level 5: Evaluate)

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Name of the Academic Program: B.Sc.Honours with Computer Application

Course Code: CMAADSE05T, CMAADSE05P

Course Title: Cloud Computing

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Understand the key technologies, strengths, and limitations of cloud computing and the possible applications for state-of-the-art cloud computing. (Level 2: Understand)
CO-2:	Distinguish the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud, etc. (Level 4: Analyze)
CO-3:	Identify the core issues of cloud computing such as security, privacy, and interoperability. (Level 4: Analyze)
CO-4:	Select the appropriate cloud computing solutions and recommendations according to the applications used. (Level 5: Evaluate)

Course Code: CMAADSE06P

Course Title: Project

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Review current knowledge and developments in the chosen technical area by doing a literature search. (Level 2: Understand)
CO-2:	Choose a problem area related to real time issues and develop a model to solve it. (Level 3: Apply)
CO-3:	Schedule detailed technical work in the chosen area & employ it using one or more of theoretical studies & computer simulations.(Level 3: Apply)
CO-4:	Prepare a formal report describing the work undertaken and results obtained so far (Level 6: Create)

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Name of the Academic Program: B.Sc.Honours with Computer Application

Course Code: CMASSE001

Course Title: Programming in Python

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Define problems and learn the role of computer programs to problem solving. (Level 1: Remember)
CO-2:	Give examples of problem solving techniques like flowchart, decision tree and algorithm. (Level 3: apply)
CO-3:	Use python interpreter and different keywords and function of python to solve practical problems (Level 3: Apply)
CO-4:	Practice basic programming logics for different types of problem solving. (Level 3: Apply)

Course Code: CMASSE002

Course Title: R Programming

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Define data types, subsetting, vectorized operations (Level 1: Remember)
CO-2:	Explain reading data ,writing data , control structures and the use and purpose of various functions (Level 2: Understand)
CO-3:	Illustrate scoping rules ,debugging tools and simulation. (Level 4: Analyze)
CO-4:	Practice basic programs on R. (Level 3: Apply)