

MAR AUGUSTHINOSE COLLEGE RAMAPURAM

Department of Computer Science

POs, PSOs and COs of Under Graduate BCA Programme

Upon completion of the BCA Degree Programme, the Undergraduate will be able to

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO1	Apply knowledge of mathematics, management, logic and allied engineering subjects as applicable to Computer Science and Engineering
PSO2	Understand how to identify, formulate and design solutions in the areas of Computer Science and Engineering
PSO3	Demonstrate the abilities to design and develop algorithms and implement them as programs, with analysis and interpretation of data
PSO4	Develop skills in software development so as to enable the graduates to take up employment/self-employment in local, Indian & global software market
PSO5	Address the challenges of complex and computation intensive problems
PSO6	Learn theoretical foundations of different branches of Computer Science so that students can pursue for higher studies
PSO7	Adopt any modern engineering tool or software for analyzing and solving various computer engineering problems
PSO8	Have the knowledge of contemporary issues and able to apply various software engineering approaches for project management
PSO9	Understand the impact of professional engineering solutions in environmental contexts and the need for sustainable development.
PSO10	Tackle the real life problems using the internationally accepted latest technologies
PSO11	Communicate effectively on complex programming activities with the IT community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PSO12	Enhance Employability by developing leadership, effective communication & time management skills and also by incorporating ethics & team work ability
PSO13	Organize and deliver relevant applications of knowledge through effective LG written verbal, graphical/ virtual communication and interact productively with people from diverse background.

Semester I

Course		Course Outcome
CA1CRT01 Computer Fundamental and Digital Principles	CO1	Bridge the fundamental concepts of computers with the present level of knowledge of the students
	CO2	Familiarize operating systems, programming languages, peripheral devices, networking, multimedia and internet
	CO3	Understand binary, hexadecimal and octal number systems and their arithmetic.
	CO4	Understand how logic circuits and Boolean algebra forms as the basics of digital computer.
	CO5	Demonstrate the building up of Sequential and combinational logic from basic gates.
CA1CRT02 Methodology of Programming and C Language	CO1	Students would be able to read, understand and trace the execution of programs written in C Language.
	CO2	Students would be able to write C programs for a given algorithm.
	CO3	Students would be able to implement programs with control structures, functions, arrays and pointers.
	CO4	Students would be able to write programs that perform operations using structure, union and other user defined datatypes.
CA1CRP01 Software Lab I (Core)	CO1	Develop the logic to solve the given problem.
	CO2	Write programs using control structures in C.
	CO3	Write programs based on arrays and strings
	CO4	Write programs using user-defined functions, structures and pointers
Discrete Mathematics 1	CO1	To apply logically valid forms of argument and avoid logical errors
	CO2	To employ both direct and indirect arguments to desire new results from those already known to be true.
	CO3	Relate each major topic in Discrete Mathematics to an application area in computing.
	CO4	Learns how to represent sets in computer science.
	CO5	Represents a graph using an adjacency list and adjacency matrix and apply graph theory to application problems such as computer networks
Basic Statistics & Introductory Probability Theory	CO1	To develop the students ability to deal with numerical and quantitative issues in computer science.
	CO2	To enable the use of statistical, graphical and algebraic techniques whenever relevant.
	CO3	To understand different types of distribution and its application.
	CO4	Able to demonstrate their understanding of descriptive statistics by practical application of quantitative reasoning and data visualization.

Semester II

Course		Course Outcome
CA1812103 Data Base Management Systems Core	CO1	Practice with the SQL queries
	CO2	Understand ER model
	CO3	Understand how to design database
	CO4	Understand transaction processing
CA2CRT04 Computer Organization and Architecture	CO1	Describe the fundamental organisation of a computer system
	CO2	Explain the functional units of a processor
	CO3	Explain addressing modes, instruction formats and program control statements
	CO4	Distinguish the organization of various parts of a system memory hierarchy
	CO5	Describe basic concept of parallel computing
	CO6	Describe fundamentals concepts of pipeline and vector
CA2CRT05 Object Oriented Programming using C++	CO1	To comprehend the basic object oriented programming concepts in C++
	CO2	Describe the constructors, destructors and operator overloading concepts in C++
	CO3	Understand the concept of code reusability with the help of Inheritance.
	CO4	Students should able to apply pointers, virtual functions and files in complex programming situations.
CA2CRP02 Software Lab II	CO1	Students should able to formulate query, using SQL, solutions to a broad range of query and data update problems.
	CO2	Students should able to transform an information model into a relational database schema and to use a data definition language and/or utilities to implement the schema using a DBMS.
	CO3	Students should be able to develop solutions for a range of problems using objects and classes.
	CO4	Students should able to understand how to apply the major object-oriented concepts to implement object oriented programs in C++, encapsulation, inheritance and polymorphism
Discrete Mathematics II	CO1	Explore application of tress in computer science.
	CO2	Learns about networks.
	CO3	Explore the application of Boolean Algebra in the design of electronic circuits.
	CO4	Able to set up and solve the augmented matrix associated with a linear system in three variables.
	CO5	To improve problem solving skills.

Semester III

CA3CRT06 Computer Graphics	CO1	Understand hardware and software components of graphics systems and application areas of computer graphics.
	CO2	Apply fundamental algorithms to generate lines and circles.
	CO3	Implement 2D geometric transformations and viewing algorithms.
	CO4	Understand various 3D display methods and object Representation techniques.
	CO5	Acquire the basic concepts of computer animations
		Understand hardware and software components of graphics systems and application areas of computer graphics.
		Apply fundamental algorithms to generate lines and circles.
		Implement 2D geometric transformations and viewing algorithms.
CA1813109 Data Structure using C++	CO1	Implement sorting and searching algorithms using Arrays.
	CO2	Apply various data structure stacks, queues using arrays
	CO3	Implement linked list using dynamic memory allocation
	CO4	Show tree traverse technique to various applications
: CA3CRT08 Operating Systems	CO1	Acquire the basic understanding of Operating system.
	CO2	Understand the concepts of process and various process Scheduling Algorithms.
	CO3	Appraise the design of various algorithms for process Synchronization and deadlock handling.
	CO4	Analyze various memory management techniques.
	CO5	Master concepts related to file system interface, implementation and disk management.
CA3CRT07 Microprocessor and PC Hardware	CO1	Understand the functionality and features of CPU.
	CO2	Understand the architecture of 8085 microprocessor.
	CO3	Understand the instruction set and addressing modes of 8085 microprocessor.
	CO4	Identify the components of a motherboard.
	CO5	Acquire the basic understanding of memory modules and the logical memory layout
CA1813603 Software Lab III	CO1	Discuss the provisions in C++ to organize and manipulate data structures using array
	CO2	Understand stack and queue executions in terms of C++ derived data type.
	CO3	Apply the concepts of dynamic memory allocation for the formation of linked list and for garbage collection
	CO4	Apply tree terminology for data manipulations

Advanced Statistical Methods	CO1	To understand the concept of the sampling distribution of a statistical and the behaviour of sample mean.
	CO2	Apply inferential methods relating to the means of normal distribution.
	CO3	Able to demonstrate their knowledge of the basics of inferential statistics by making valid generalization from sample data.
	CO4	Use limited sample to make intelligent and accurate conclusions.

Semester IV

CA4CRT10 Design and Analysis of Algorithms	CO1	Students should able to define the basic concepts of algorithms and analyze the performance of algorithms.
	CO2	Students should able to use various algorithm design techniques or developing algorithms.
	CO3	Students should able to estimate time complexity of various searching and sorting algorithms
CA4CRT11 System analysis & Software Engineering	CO1	Understand the basics of business information systems
	CO2	Understand the basics of software engineering and life cycle models
	CO3	Identify software requirements engineering and project planning activities
	CO4	Understand the software design framework and software reliability
	CO5	Assimilate the knowledge of different software testing strategies.
CA4CRT13 Web Programming using PHP	CO1	Students should able to understand the general concepts of PHP scripting language for the development of Internet websites.
	CO2	Students should able to understand the basic functions of MySQL database program.
	CO3	Students should able to learn the relationship between the client side and the server side scripts
	CO4	Students should able to develop a final project using the learned techniques
CA4CRT12 Linux Administration	CO1	Students should able to understand the basic set of commands and utilities in Linux systems.
	CO2	Understand the fundamental concepts of open-source operating system Linux
	CO3	Understand the basic set of commands and editors in Linux operating system.
	CO4	Develop shell programs in Linux operating system
	CO5	Understand the role and responsibilities of a Linux system administrator.
CA1CRP04 Software Lab IV	CO1	Students should able to design a basic web site using HTML and CSS to demonstrate responsive web design.

	CO2	Students should able to display and insert data using PHP and MySQL.
	CO3	Students should able to test, debug, and deploy web pages containing PHP
	CO4	Understand the basic commands in Linux.
	CO5	Practice shell scripting and essential shell programming
Operations Research	CO1	To use different mathematical modelling techniques utilizing Operations Research methodology.
	CO2	To find optimal solutions to problems
	CO3	To learn various methods that are used for quantitative decision making.
	CO4	Able to realize that managerial problem situations have both quantitative and qualitative considerations that are important in the decision-making process.

Semester V

CA5CRT14 Computer Networks	CO1	Students should understand the basic concepts of computer networks.
	CO2	Students should be able to know in depth about bandwidth utilization techniques
	CO3	Understand error control and flow control in data communication
	CO4	Understand various protocols in Data link, Network, Transport and Application layers
	CO5	Understand network security
CA5CRT15 IT & Environment	CO1	Students should able to recognize the importance of environment and the sustainable of natural resources
	CO2	Students should able to analyze interaction between social and environmental processes.
	CO3	Students should able to use scientific reasoning to identify and understand environment problems and evaluate potential solutions.
	CO4	Students should able to visualize the impacts of human activities on Environment and role of society in these impacts.
CA5CRT16 Java Programming Using Linux	CO1	Students should able to acquire the knowledge of the structure and model of the Java programming language,
	CO2	Students should able to use the Java programming language for various programming technologies
	CO3	Students should able to evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements

	CO4	Students should able to develop software in the Java programming language
CA5CRP05 Software Lab V	CO1	Students should able to demonstrates how to achieve reusability using inheritance, interfaces and packages and describes faster application development can be achieved.
	CO2	Students should able to demonstrate understanding and use of different exception handling mechanisms and concept of multithreading for robust faster and efficient application development.
	CO3	Students should able to Identify and describe common abstract user interface components to design GUI in Java using Applet & AWT along with response to events
	CO4	Students should able to Identify, Design & develop complex Graphical user interfaces using principal Java Swing classes
CA5CRP06 Software Development Lab1	CO1	Students should able to identify the requirements for the real world problems.
	CO2	Students should be able to demonstrate and build the project successfully by hardware requirements, coding, emulating and testing.
	CO3	Students should able to report and present the findings of the study conducted in the preferred domain
	CO4	Students should able to demonstrate an ability to work in teams and manage the conduct of the research study
CS5OP T02 Computer fundamentals, internet and MS Office	CO1	Students are equipped to meet the Computer aspects in a better way
	CO2	Assisting students to be expertise in computer related jobs
	CO3	Developing practical skills in internet

Semester VI

CA6ELT01 Data Mining(T)	CO1	Acquire the basic understanding of data mining functionalities and data preprocessing.
	CO2	Understand the concept of Data Warehouse and OLAP technology.
	CO3	Understand various classification, prediction and association mining methods.
	CO4	Acquire knowledge about various clustering methods.
	CO5	Master concepts related to mining complex data.
CAC6RT17 Cloud Computing	CO1	Students should able to articulate the main concepts, key technologies, strengths, and limitations of cloud computing and the possible applications for state-of-the-art cloud computing
	CO2	Students should able to identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud, etc.

	CO3	Students should able to explain the core issues of cloud computing such as security, privacy, and interoperability.
	CO4	Students should able to provide the appropriate cloud computing solutions and recommendations according to the applications used
CAC6RT18 Mobile Application Development - Android	CO1	Students should able to install and configure Android application development tools.
	CO2	Students should able to design and develop user Interfaces for the Android platform.
	CO3	Students should able to save state information across important operating system events
	CO4	Students should able to apply Java programming concepts to Android application development.
	CO5	Students should able to demonstrate a sound technical knowledge of their selected project topic.
	CO6	Students should able to undertake problem identification, formulation and solution
	CO7	Students should able to design engineering solutions to complex problems utilizing a systems approach.
	CO8	Students should able to conduct an engineering project
CA6CRP08 Software Development Lab II	CO1	Students should able to demonstrate a sound technical knowledge of their selected project topic.
	CO2	Students should able to undertake problem identification, formulation and solution
	CO3	Students should able to design engineering solutions to complex problems utilizing a systems approach.
	CO4	Students should able to conduct an engineering project
CA6CRP08 Viva Voce	CO1	Students should able to face interview both in the academic and the industrial sector
	CO2	Students should able to get an overall knowledge in the relevant field of computer applications.
	CO3	Students should able to serve industry requirement.
CA6CRP07 Software Lab VI & Seminar	CO1	Students should able to apply essential Android Programming concepts & uses interactive interfaces
	CO2	Students should able to develop Android applications related to mobile related server-less database like SQLITE
	CO3	Students should able to develop various Android applications related to layouts