



ABBAS KHAN COLLEGE FOR WOMEN

O. T.C Road cross, Cubbonpet, Bengaluru-560002

DEPARTMENT OF COMPUTER APPLICATION

PROGRAMME OUTCOME

Program Outcomes:

At the end of the three year BCA programme the students will be able to:

- Understand, analyze and develop computer programs in the areas related to algorithm, web design and networking for efficient design of computer based system.
- Work in the IT sector as system engineer, software tester, junior programmer, web developer, system administrator, software developer etc.
- Apply standard software engineering practices and strategies in software project development using open source programming environment to deliver a quality of product for business success.

COURSE OUTCOMES FOR THE YEAR **BACHELOR OF COMPUTER APPLICATION**

I SEMESTER

CA-CIT DISCRETE STRUCTURE

- CO1: Learning the fundamentals of probability, relations, and set theory.
CO2: Learn about graph and tree representation and its uses.
CO3: Discrete Structure provides the fundamental framework for many areas of Mathematics, including Combinations, graph theory and number theory.
CO4: Discrete Structures are a fundamental subject in Mathematics and Computer Science education, providing a basic for further study and research in these fields

CA-C2T PROBLEM SOLVING TECHNIQUES

- CO1: Creating and evaluating algorithms for various challenges.
- CO2: Developing programs with decision-making frameworks, loops, functions, and pointers.
- CO3: Give a brief description on different searching & sorting Algorithms.
- CO4: To use C programming to analyse and create programs to solve real-world issues.

CA-C3T DATA STRUCTURE

- CO1: Explains many data structure types along with their benefits and drawbacks.
- CO2: Determine the algorithm's complexity and choose the best data format for the given problem.
- CO3: Give a brief description on different searching & sorting Algorithms.
- CO4: Able to learn about different Searching, Sorting & Hashing Techniques.

SEC I: Office Management Tools

- CO1: Identify skills and competencies of an office manager.
- CO2: Develop processes for office operations.
- CO3: Identify components of office management roles and procedures and team dynamics.
- CO4: Communicate finding using business software applications like MS Office, Word Excel & PowerPoint.

II SEMESTER

CA-C6T COMPUTER ARCHITECTURE

- CO1: To comprehend computer background communication (internal communication).
- CO2: With memory-management approaches, let me be clear.
- CO3: Comprehend the central processing unit's theory and architecture.

CA-C7T OBJECT ORIENTED PROGRAMMING USING JAVA

- CO1: To use Java to analyse and create programmes to solve real-world issues.
- CO2: comprehend the central processing unit's theory and architecture.
builds loops in Java.
- CO3: Declares classes and objects.
- CO4: Explains exceptions and handles them.
- CO5: Writes Java programmes with multiple threads.

CA-C8T DATABASE MANAGEMENT SYSTEM

- CO1: Give a brief description of the core components of relational database management systems.
- CO2: Describe the fundamental ideas behind relational database design, relational algebra, entity-relationship modelling, and SQL.
- CO3: By normalising the database, the design can be improved.
- CO4: Create ER-models that depict straightforward database application scenarios. Normalise your database.

III SEMESTER

CA-C11T OPERATING SYSTEMS

- CO1: To understand the basic concepts and functions of operating systems
- CO2: To analyze Scheduling algorithms
- CO3: To understand deadlock, prevention and avoidance algorithms.
- CO4: Compare and contrast various memory management schemes.

CA-C12T COMPUTER NETWORKS

- CO1: The functions of OSI and TCP/IP model Layers.
- CO2: Familiarize with the Transmission Media, Flow Control and Error Detection & Correction.
- CO3: Understand fundamental concepts in Routing, Addressing & working of Transport.
- CO4: Understand Different types of networks and IP addresses.

CA-C13T PYTHON PROGRAMMING

- CO1: To use Python to analyse and create programs to solve real-world issues.
- CO2: Declares classes and objects.
- CO3: Explains exceptions and handles them.
- CO4: Writes Python programs with multiple threads.

SEC II: Computer Assembly and Repair

- CO1: Able to assemble or set-up and upgrade personal computer systems.
- CO2: Able to diagnose and isolate faulty components of central processing unit.
- CO3: Able to optimize system's performance and install or connect peripherals.

IV SEMESTER

CA-C16T SOFTWARE ENGINEERING

- CO1: Knowledge of basic SW engineering methods and practices, and their appropriate application.
- CO2: Describe software engineering layered technology and Process frame work.
- CO3: A general understanding of software process models such as the waterfall and evolutionary models.
- CO 4: Understanding of software requirements and the SRS documents.
- CO5: Understanding of the role of project management including planning, scheduling, risk management, etc.
- CO6: Describe data models, object models, context models and behavioral models.
- CO7: Understanding of different software architectural styles.

CA-C17T DESIGN & ANALYSIS OF ALGORITHMS

- CO1: Be able to compare functions using asymptotic analysis and describe the relative merits of worst-, average-, and best-case analysis.
- CO2: Be able to solve recurrences using the master, the iteration, and the substitution method.
- CO3: Become familiar with a variety of sorting algorithms and their performance characteristics (eg, running time, stability, space usage) and be able to choose the best one under a variety of requirements.
- CO4: Be able to understand and identify the performance characteristics of fundamental algorithms and data structures and be able to trace their operations for problems such as sorting, searching, selection, operations on numbers, polynomials and matrices, and graphs.

CA-C18T INTERNET TECHNOLOGIES

- CO1: Analyze a web page and identify its elements and attributes.
- CO2: Create web pages using HTML and Cascading Style Sheets.
- CO3: Build dynamic web pages using JavaScript (Client side and Server side programming).
- CO4: Understanding Various Web frameworks and Database connectivity.

V SEMESTER

CA-C21T: ARTIFICIAL INTELLIGENCE

- CO 1. Understand the various characteristics of problem solving agents and apply problem solving through search for AI applications.
- CO 2. Appreciate the concepts of knowledge representation using Propositional logic and Predicate calculus and apply them for inference/reasoning.
- CO 3. Obtain insights about Planning and handling uncertainty through probabilistic reasoning and fuzzy systems.
- CO 4. Understand basics of computer vision and Natural Language Processing and understand their relevance in AI applications.
- CO 5. Obtain insights about machine learning, neural networks, deep learning networks and their significance.

CA-C22T: DATA ANALYTICS

- CO1: Explore the fundamental concepts of data analytics.
- CO2: Recognize and conduct statistical inference to solve engineering problems.
- CO3: Appreciate the science of statistics and the scope of its potential applications Summarize and present data in meaningful ways
- CO4: Select the appropriate statistical analysis depending on the research question at hand Form testable hypotheses that can be evaluated using common statistical analyses
- CO5: Effectively and clearly communicate results from analyses performed to others.

CA-C23T: WEB PROGRAMMING

- CO1: Understand the basics of Web Programming concepts
- CO2: To build dynamic web pages with validation using JavaScript objects and by applying different event-handling mechanisms.
- CO3: Analyze various PHP library functions that manipulate files and directories.
- CO4: To develop modern interactive web applications using PHP and XML.

CA-VI: Quantitative Techniques

- CO1: Relate a formal quantitative approach to problem solving and decision making and acquire the knowledge about mean, median, mode.
- CO2: Apply the concepts of probabilistics distributions in solving problems.

CO3: Extend the ability to solve linear programming problems by graphical and simple methods.

CO4: Outline quantitative models to decision making and problem analysis, and their interpretations in transportation problems and game theory.

CA-EI-ELECTIVE I: Data Mining

CO1: Understand what is data mining, what kinds of data can be mined, what kinds of patterns can be mined, and what kinds of applications are targeted.

CO2: Apply machine learning, pattern recognition, statistics, visualization, algorithm, database technology and high-performance computing in data mining applications.

CO3: Explain major issues in data mining.

CO4: Manipulate data preprocessing, data warehouse and OLAP technology, data cube technology, mining frequent patterns and association, classification, clustering.

SEC III: Cyber Crimes, Cyber Laws and Intellectual Property Rights

- CO1: Understand cyber crimes, their nature, legal remedies and as to how report the crimes through available platforms and procedures.
- CO2: Recognize various privacy and security concerns on Social media and e-commerce platforms.
- CO3: Use basic tools and technologies to protect their devices.
- CO4: Understand digital environment and IPR issues.

VI SEMESTER

CA-C26T: Theory of Computation

- CO1: Demonstrate advanced knowledge of formal computation and its relationship to languages.
- CO2: Distinguish different computing languages and classify their respective types.
- CO3: Recognize and comprehend formal reasoning about languages.
- CO4: Show a competent understanding of the basic concepts of complexity theory.

CA-C27T: Machine Learning

- CO1: Learn the basics of machine learning, understanding its uses, challenges, and various applications.
- CO2: Build practical data skills, covering data collection, analysis, visualization, and preparation.
- CO3: Become skilled in using classification and regression algorithms, including selecting, training, and evaluating models.
- CO4: Dive into advanced clustering and specialized applications, using methods like K-Means, DBSCAN, and others.

CA-C28T: Mobile Application Development

- CO1: Understand the basic concepts of Mobile application development
- CO2: Design and develop user interfaces for the Android platforms
- CO3: Apply Java programming concepts to Android application development and create an application using database

CA-V2: Electronic Content Design

- CO1: To deliver the content via various media such as radio, television, computer etc. □
- CO2: To increase students' concentration on particular subject matter in depth learning. □
- CO3: To feel emotionally good with joyful learning and active learning involvement of students during the content delivery
- CO4: To reuse many time the content to various group of same class without hesitate and unchanging.
- CO5: To handle easy to the facilitators during the content delivery.

□

CA-E2-Elective II: OPERATION RESEARCH

- CO1: Formulation of optimization model and applying appropriate optimization techniques for decision making.
- CO2: Solve linear programming problems using appropriate optimization techniques.
- CO3: Finding the optimal strategy for Minimization of Cost of shipping of products from source to Destination.
- CO4: Optimizing the allocation of resources to Demand points in the best possible way.

CA-E2: SOFTWARE TESTING

- CO1: Differentiate the various testing techniques
- CO2: Derive Test Cases for any given problem.
- CO3: Classify the problem into suitable testing models.
- CO4: Apply a wide-variety of testing techniques in an effective and efficient manner.
- CO5: Explain the need for planning and monitoring a process


PRINCIPAL
ABBAS KHAN COLLEGE FOR WOMEN
OTC Road Cross, Cubbonpet,
BENGALURU - 560 002.



ABBAS KHAN COLLEGE FOR WOMEN
O. T.C Road cross, Cubbonpet, Bengaluru-560002

DEPARTMENT OF COMPUTER APPLICATION

PROGRAMME OUTCOME

Program Outcomes:

At the end of the three year BCA programme the students will be able to:

- Understand, analyze and develop computer programs in the areas related to algorithm, web design and networking for efficient design of computer based system.
- Work in the IT sector as system engineer, software tester, junior programmer, web developer, system administrator, software developer etc.
- Apply standard software engineering practices and strategies in software project development using open source programming environment to deliver a quality of product for business success.

COURSE OUTCOMES

I SEMESTER

BCA103T: Problem Solving Techniques using C

- CO1: Creating and evaluating algorithms for various challenges.
- CO2: Developing programs with decision-making frameworks, loops, functions, and pointers.
- CO3: Give a brief description on different searching & sorting Algorithms.
- CO4: To use C programming to analyse and create programs to solve real-world issues.

BCA104T: Computer Organization

- CO1: Understands the basics of instructions sets and their impact on processor design.
- CO2: Ability to understand the concept of I/O organization
- CO3: It provides the ability to perform computer arithmetic operations.
- CO4: Ability to understand the concept of cache mapping techniques.

BCA105T: Discrete Mathematics

- CO1: Discrete Mathematics often involves Complex problem solving which can improve analytical thinking and problem solving skills.
- CO2: It is used in networking for designing and routing algorithms.
- CO3: Discrete mathematics plays a role in data science; particularly in areas like combination, probability and graph theory which are important for analyzing and modeling data.
- CO4: Learn about graph and tree representation and its uses.

BCA104P: Office Automation

- CO1: Identify skills and competencies of an office manager.
- CO2: Develop processes for office operations.
- CO3: Identify components of office management roles and procedures and team dynamics.
- CO4: Communicate finding using business software applications like MS Office, Word Excel & PowerPoint.

II SEMESTER

BCA203T: Data Structures

- CO1: Explains many data structure types along with their benefits and drawbacks.
- CO2: Determine the algorithm's complexity and choose the best data format for the given problem.
- CO3: Give a brief description on different searching & sorting Algorithms.
- CO4: Able to learn about different Searching, Sorting & Hashing Techniques.

BCA204T: DATABASE MANAGEMENT SYSTEM

- CO1: Give a brief description of the core components of relational database management systems.
- CO2: Describe the fundamental ideas behind relational database design, relational algebra, entity-relationship modelling, and SQL.
- CO3: By normalising the database, the design can be improved.
- CO4: Create ER-models that depict straightforward database application scenarios. Normalise your database.

BCA205T: NUMERICAL & STATISTICAL METHODS

- CO1: Understand the various approaches dealing the data using theory of probability.
- CO2: Develop a framework for estimating and predicting the different sample of data for handling the uncertainties.
- CO3: Understand error, source of error and its affect on any numerical computation and also analyzing the efficiency of any numerical algorithm.
- CO4: Learn how to obtain numerical of nonlinear equations using Bisection, Newton-Raphson & Fixed-point iteration methods.

III SEMEESTER

BCA303T: Object Oriented Programming using C++

- CO1: To use C++ to analyse and create programs to solve real-world issues.
- CO2: Comprehend the central processing unit's theory and architecture builds loops in C++.
- CO3: Declares classes and objects.
- CO4: Explains exceptions and handles them.
- CO5: Writes C++ programs with multiple threads.

BCA305T: Operating System

- CO1: To understand the basic concepts and functions of operating systems
- CO2: To analyze Scheduling algorithms
- CO3: To understand deadlock, prevention and avoidance algorithms.
- CO4: Compare and contrast various memory management schemes.

IV SEMESTER

BCA403T: VB.NET Programming

- CO1: Design, formulate and construct applications with VB.NET.
- CO2: Integrate variables and constants into calculations applying VB.NET.
- CO3: Create VB.NET programs using multiple array techniques.
- CO4: Build integrated VB.NET solutions using files and structures with printing capabilities.

BCA404T: Unix and Shell Programming

- CO1: Understand the basic concepts of UNIX Architecture and basic Commands.
- CO2: Understand the commands related to Shell basics, vi editor and regular expression commands.
- CO3: Understand the concepts of advance file concepts, commands related to Shell script and filter commands.
- CO4: Understand the concepts of process and commands related to per script.

BCA405T: Software Engineering

- CO1: Knowledge of basic SW engineering methods and practices, and their appropriate application.
- CO2: Describe software engineering layered technology and Process frame work.
- CO3: A general understanding of software process models such as the waterfall and evolutionary models.
- CO 4: Understanding of software requirements and the SRS documents.
- CO5: Understanding of the role of project management including planning, scheduling, risk management, etc.
- CO6: Describe data models, object models, context models and

behavioral models.
CO7: Understanding of different software architectural styles.

V SEMESTER

BCA501T: Data Communication & Networks

- CO1: The functions of OSI and TCP/IP model Layers.
- CO2: Familiarize with the Transmission Media, Flow Control and Error Detection & Correction.
- CO3: Understand fundamental concepts in Routing, Addressing & working of Transport.
- CO4: Understand Different types of networks and IP addresses.

BCA502T: Artificial Intelligence

- CO 1. Understand the various characteristics of problem solving agents and apply problem solving through search for AI applications.
- CO 2. Appreciate the concepts of knowledge representation using Propositional logic and Predicate calculus and apply them for inference/reasoning.
- CO 3. Obtain insights about Planning and handling uncertainty through probabilistic reasoning and fuzzy systems.
- CO 4. Understand basics of computer vision and Natural Language Processing and understand their relevance in AI applications.
- CO 5. Obtain insights about machine learning, neural networks, deep learning networks and their significance.

BCA503T: Java Programming

- CO1: To use Java to analyse and create programmes to solve real-world issues.
- CO2: comprehend the central processing unit's theory and architecture builds loops in Java.
- CO3: Declares classes and objects.
- CO4: Explains exceptions and handles them.
- CO5: Writes Java programs with multiple threads.

BCA504T: Analysis & Design of Algorithm

- CO1: Be able to compare functions using asymptotic analysis and describe the relative merits of worst-, average-, and best-case analysis.
- CO2: Be able to solve recurrences using the master, the iteration, and the substitution method.
- CO3: Become familiar with a variety of sorting algorithms and their performance characteristics (eg, running time, stability, space usage) and be able to choose the best one under a variety of requirements.
- CO4: Be able to understand and identify the performance characteristics of fundamental algorithms and data structures and be able to trace their operations for problems such as sorting, searching, selection, operations on numbers, polynomials and matrices, and graphs.

BCA505T- ELECTIVE I: DATA MINING

- CO1: Understand what is data mining, what kinds of data can be mined, what kinds of patterns can be mined, and what kinds of applications are targeted.
- CO2: Apply machine learning, pattern recognition, statistics, visualization, algorithm, database technology and high-performance computing in data mining applications.
- CO3: Explain major issues in data mining.
- CO4: Manipulate data preprocessing, data warehouse and OLAP technology, data cube technology, mining frequent patterns and association, classification, clustering.

VI SEMESTER

BCA601T: System Programming

- CO1: To understand the relationship between system software and machine architecture.
- CO2: Ability to know the design and implementation of linkers and loaders.
- CO3: Ability to understand of macroprocessors.
- CO4: To able to have a knowledge of system software tools.

BCA602T: Professional & Business Communication

- CO1: Demonstrate the use of basic and advanced business writing skills.
- CO2: Produce clear and concise written business documents.
- CO3: Develop interpersonal communications skills that are required for social and business interaction.
- CO4: Provides ability to communicate effectively in the online environment.

BCA603T: Web Programming

- CO1: Understand the basics of Web Programming concepts
- CO2: To build dynamic web pages with validation using JavaScript objects and by applying different event-handling mechanisms.
- CO3: Analyze various PHP library functions that manipulate files and directories.
- CO4: To develop modern interactive web applications using PHP and XML.

BCA604T- ELECTIVE II: MACHINE LEARNING

- CO1: Learn the basics of machine learning, understanding its uses, challenges, and various applications.
- CO2: Build practical data skills, covering data collection, analysis, visualization, and preparation.
- CO3: Become skilled in using classification and regression algorithms, including selecting, training, and evaluating models.
- CO4: Dive into advanced clustering and specialized applications, using methods like KMeans, DBSCAN, and others.