Bachelor of Computer Application (B.C.A.)

Programme Outcomes (PO's)

After completing B.C.A. programme the student will be able to:

PO1: problem solving competence while using C language

PO2: gain the knowledge of awareness about automation.

PO3: An exposure towards complex commerce problems and their solution.

PO4: Apply appropriate techniques, resources, modern IT tools in understanding, analyzing, developing computer programs in the area related to algorithm, web design and networking for efficient design of computer-based system.

PO5: Enhance communication skills so that they can effectively present technical information in oral and written reports.

PO6: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PO7: Able to demonstrate, understand leadership and management principles.

PO8: Evaluate the performance of memory allocation and replacement techniques.

Programme Specific Outcomes(PSO's)

PSO1: Explain the basic concepts of Humane sources management and its applications in the individual, team and organizational levels.

PSO2: Demonstrating ability to evolve strategies for organizational benefits.

PSO3: Imparted knowledge required for planning, designing and building Complex Application Software Systems.

PSO4: Deliver professional service with updated technologies in computer application based career.

PSO5: Produced entrepreneurs who developed customized solutions for small and medium enterprises.

PSO6: Write the statement using logical operation.

PSO7: Find the inverse of matrix.

Course Outcome(CO's)

BCA-I(Sem-I)
Fundamentals of Computer(CC-101)

CO1: Identify and analyse computer hardware, software, and network components.
CO2: An ability to understand computer buses and input/output peripherals.
CO3: Demonstrate a basic understanding of computer hardware and software. Apply logical skills to programming in a variety of languages.
CO4: Familiarize operating systems, programming languages, peripheral devices, networking, multimedia and internet.
CO5: Apply the knowledge and understanding the functions of various hardware components and their building blocks.
CO6: Outline Computer Number System and solve Numerical Problems based on it.

Introduction to Programming Using C(CC-102)
CO7: Implements the algorithms and draw flowcharts for solving Mathematical problem.
CO8: Designing and developing Computer programs, analyzes, and interprets the concept of pointers, declarations, initialization, operations on pointers and their usage.
CO9: Explain different stages of an instruction execution.
CO10: Identify user defined functions, categories of function and recursion, structures and unions.
CO11: Develop confidence for self-education and ability for life-long learning needed for computer language.
CO12: Write small programs using arrays, strings, structures, unions, functions and pointers.

Principles of Management(AEC-103)
CO13: Familiarizes the basics and levels of principles of management.
CO14: Describe work of major contributors to the field of Management.
CO15: Knowledge gain by what a manager does, and how they are integral to planning, organizing, leading, and controlling a modern organization.
CO16: Explain basic principles, functions and different management theories.
CO17: Recognize the importance of employee motivation and how to promote it.
CO18: Compare the processes of developing and implementing information systems.

Business Communication(AEC-104)
CO19: Explain the concept of communication and types.
CO20: Discuss the importance of effective communication in business.
CO21: Demonstrate his verbal and non-verbal communication ability through presentations.
CO22: Draft effective business correspondence with brevity and clarity.
CO23: Display effective oral and written communication skills in the professional

context.

CO24: Creates effective business correspondence with clarity.

Office Automation (AEC-105)
CO25: Use of office automation, internet and internet tools.
CO26: Documents, spreadsheets, make small presentations and would be acquainted
with internet.
CO27: Discuss the theory of Computer Organization to provide an insight of how basic
computer components are specified.

Lab Course (CCL 106) –I Based on CC102
CO28: Describe and trace the execution of programs written in C language.
CO29: Write the C code for a given algorithm.
CO30: Usage of Arithmetic operator, Conditional operator, logical operator and
relational operators and other C constructs.
CO31: Solve programs using functions.

Lab Course (CCL 107) -II Based on AEC 105
CO32: Use internet and internet tools.
CO33: To perform presentation skills.
CO34: MS Word Documents.
CO35: Present conclusions effectively, orally, and in writing.

BCA-I (SEM-II)
Database Management System (CC-201)
CO36: To design and build a simple database system and demonstrate competence with
the fundamental tasks involved with modeling, designing, and implementing a
DBMS.
CO37: Explain the basic concepts of relational data model, entity-relationship model,
relational database design, relational algebra and SQL.
CO38: Familiar with basic database storage structures and access techniques: file and
page organizations, indexing methods including B tree, and hashing.
CO39: Sketch ER-models to represent simple database application scenarios.
CO40: Outline the concepts of database architecture, client server architecture and
distributed database concepts.
CO41: Improve the database design by normalization.

Operating System (CC-202)
CO42: Outline the basics of operating systems like kernel, shell, types and views of
operating systems.
CO43: Explain the various features of distributed OS like UNIX, Linux, windows etc.
CO44: Describe the function of various internal computer components.

CO45: Learn different types of operating systems along with concept of file systems used in operating system.
CO46: Clarify various memory management techniques and concept of thrashing.
CO47: Recognize files system interface, protection and security mechanisms.

Object Oriented Programming Using With C++ (CC-203)
CO48: Analyze, write, debug, and test basic C++ codes using the approaches introduced in the course.
CO49: Classify inheritance with the understanding of early and late binding, generic programming.
CO50: Examine object-oriented programming and advanced C++ concept.
CO51: Use virtual and pure virtual function and complex programming language.
CO52: Explain dynamic memory management techniques using pointers, constructors, destructors, etc.
CO53: Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.

Financial Accounting with Tally (AEC-204)
CO54: Develop computer skills of recording financial transactions, preparation of annual accounts and reports using Tally.
CO55: Employ basic accounting terminology, procedures and systems of maintaining accounting records.
CO56: Gain the Knowledge in the practical applications of accounting, learn principles and concepts of Accountancy, company accounts etc.
CO57: Explain the basics of tally and computerized accounting.

CO58: Analyses interpret and communicate the information contained in basic financial statements and explain the limitations of such statements.

Mathematical Foundations for Computer Applications (AEC-205)
CO59: Define various types of sets and find complement of various sets.
CO60: Explain union, intersection and difference of sets.
CO61: Define sets, different types of sets and apply De-Morgan's laws for solve examples on sets.
CO62: Relate elementary transformations to find inverse of a matrix.
CO63: Find degree of vertex, isolated vertex and Pendant vertex.
CO65: Write the matrix for given graph or Draw graph for given adjacency matrix and incidence matrix.

Lab Course (CCL 206)-III Based on CC201 and AEC 204
CO66: Classify MS-Access DBMS and design database.
CO67: Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data.
CO68: Creates Company using Tally ERP.
CO69: Use basic accounting, ledger, banking and other business roles using Tally.
CO70: Work with MS-Office and Tally, in MS-PowerPoint, MS-Access and Tally.

Lab Course (CCL 207)-IV Based on CC 203
CO71: Prepare students in programming using object oriented concepts with C++.
CO72: Solve the concepts of object-oriented programming.
CO73: Developing applications using Friend functions, Inheritance and polymorphism.
CO74: Design and implement programs using classes, objects and operator overloading.
CO75: Relate virtual and pure virtual function & complex programming situations.

BCA-II (SEM-III)
Cost Accounting (301)
CO76: Exposes the students to the basic concepts and the tools used in cost accounting.
CO77: Classify the tools and techniques used in transport and contract costing.
CO78: Describe the various incentive scheme, overhead apportionment and
reapportionment techniques that are applied to manufacturing and service
business.
CO79: Identify the reasons for different result of accounts and Ascertainment of
Material and Labor Cost.
CO80: Explain Basic Cost concepts, Elements of cost and cost sheet.
CO81: Differentiate methods of pricing of material issues FIFO, LIFO, Simple
Average, weighted Average.

Human Resource Management (302)
CO82: Recognize the basic concepts of human resource management.
CO83: Discuss the applicability of HRP.

CO84: Classify various steps- recruitment, selection, training, development,
maintenance and appraisal of human factor at work and their legal provisions.
CO85: Facilitate the knowledge about performance appraisal and different method.
CO86: Ability to implement practices related employee separation.

System Analysis & Design (303)
CO87: Identify and describe the phases of the systems development life cycle.
CO88: Explain the need for and value of a formalized step-by-step approach to the
analysis, design, and implementation of computer information systems.
CO89: Analyze business problems and develop a requirements document, written in
clear and concise business language.
CO90: Various test processes and continuous quality improvement.
CO91: Developing and presenting a Requirements Definition Proposal for a new system
in a well-structured business proposal.

Object Oriented Programming with C++ (304)
CO92: Solve the concepts of class, method, constructor, instance, data abstraction,
function abstraction, inheritance, overriding, overloading, and polymorphism.
CO93: Classify inheritance with the understanding of early and late binding, usage of
exception handling, generic programming.
CO94: Describe the procedural and object oriented paradigm with concepts of streams,

classes, functions, data and objects.

CO95: Know the principles of oops concept and control structure.

CO96: Capable to work with files, file pointers and its manipulations.

CO97: Analyze the strengths and applications of standard template library in C++ language.

Computer Oriented Statistical Methods (305)

CO98: Distinguish between elements and variable in statistics.

CO99: Summarize qualitative and quantitative data.

CO100: Compute the measures of central tendency.

CO101: Work out the different measures of dispersion

CO102: Interpret to correlation coefficient and regression coefficients.

Lab Course Based on (306) paper No. 304

CO103: Discuss the difference between the top-down and bottom-up approach.

CO104: Write the object-oriented programming approach in connection with C++.

CO105: Illustrate the process of data file manipulations using C++.

CO106: Relate virtual and pure virtual function & complex programming situations.

Lab Course based on (307) Paper No. 305

CO107: Compute various measures of central tendency, dispersion, moments, skewness and kurtosis.

CO108: Interpret summary Statistics of computer output.

BCA-II (SEM-IV)
Entrepreneurship Development (401)

CO109: Discuss the concept of entrepreneurship.

CO110: Explain Theories of Entrepreneurship

CO111: Identify the causes for industrial sickness

CO112: Classify the creative process of opportunity identification and screening.

CO113: Preparing them to set up and manage their own small units.

Organizational Behaviour (402)

CO114: Analyze and compare different models used to explain individual behavior related to motivation and rewards.

CO115: Explain group dynamics and demonstrate skills required for working in groups.

CO116: Identify the various leadership styles and the role of leaders in a decision making process.

CO117: Discuss the implementation of organizational change

CO118: Categorizes the processes used in developing communication and resolving conflicts.

CO119: Justify the role of leadership qualities, Motivation Group dynamics and Team Building.

Database Management using MS-Access (403)

CO120: Explain database concepts and explore the Microsoft Office Access environment
CO121: Constructs a new database with related tables
CO122: Attach transactional records to a lookup database and work with the records in a database table.
CO123: Create simple and effective queries and create meaningful reports from tables
CO124: Query a database using different methods.
CO125: Outline the concepts of database architecture, client server architecture and distributed database concepts.

Web Technology (404)
CO126: Gains the skills and project based experience needed for entry into web application and development careers.
CO127: Capable to connect a java program to a DBMS and perform insert, update and delete operations on DBMS table.
CO128: Familiar with client server architecture and able to develop web applications.
CO129: Analyze given assignment to select sustainable web development and design methodology.
CO130: Develop solution to complex problems using appropriate method, technologies, frameworks, web services and content management.
CO131: Create and communicate between client and server, to create good and effective dynamic websites.

Computer Mathematics (405)
CO132: Define sets, different types of sets and apply De-Morgan's laws for solve examples on sets.
CO133: Relate elementary transformations to find inverse of a matrix.
CO134: Find degree of vertex, isolated vertex and Pendant vertex.
CO135: Write the matrix for given graph or Draw graph for given adjacency matrix and incidence matrix.

Lab Course Based (406) on Paper No. 403 and 404
CO136: Demonstrate an understanding of the relational data model.
CO137: Formulate, using SQL, solutions to a broad range of query and data update problems.
CO138: Develop web based application using suitable client side and server side web technologies.
CO139: Develop solution to complex problems using appropriate method, technologies, frameworks, web services and content management.

Mini Project (407)
CO140: Design and develop dynamic web pages with good aesthetic sense of designing and latest technical know-how's.
CO141: Have a good understanding of Web Application Terminologies, Internet Tools other web services.
CO142: Learn how to link and publish websites.

BCA-III (SEM-V)

Management Accounting (501)
CO143: Determine the techniques of Management Accounting.
CO144: Use ratio analysis in decision making process of the management.
CO145: Analyze cost-volume-profit techniques to determine optimal managerial decisions.
CO146: Use cost-volume-profit analysis in decision taking.
CO147: Describe the budget and budgetary control.
CO148: Describe about the nature, scope, objectives and functions of management accounting.

E-Commerce (502)
CO149: Basic concepts and technologies used in the field of management information systems.
CO150: Recognize and discuss global E-commerce issues.
CO151: Analyze the impact of E-commerce on business models and strategy.
CO152: Comprise rich knowledge of types of E-commerce exist in market i.e. B2B, B2C, C2C, C2B.
CO153: Analysis the difference between Governance and E governance.
CO154: Discuss various E-business Strategies.

CO155: Discuss the way to explore various sectors i.e. Tourism, Share market, E – Banking, and etc.

Computer Network (503)
CO156: Independently understands basic computer network technology.
CO157: Familiarize the student with the basic taxonomy and terminology of the computer networking area.
CO158: Familiarize with the Transmission Media, Flow Control and Error Detection & Correction.
CO159: Discuss the working principle of various communication protocols.
CO160: Describe, analyze and evaluate a number of data link, network, and transport layer protocols.

RDBMS with Oracle (504)
CO161: Describe the fundamental elements of relational database management systems.
CO162: Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.
CO163: Gain knowledge of the concepts of Join & sub queries.
CO164: Enhance Programming and Software Engineering skills and techniques using SQL and PL/SQL.
CO165: Formulate SQL queries on data using basic DDL, DML and DCL commands.
CO166: Recognize and identify the use of normalization and functional dependency.

Visual Programming (505)

CO167: Discovers the C# language of the .net technology of Microsoft Corporation.
CO168: Explain the Visual Basic Integrated Development Environment.
CO169: Implement an efficient scalable software solution in the form of web or windows application.
CO170: Connect a web application to a Database and perform select, insert, update and delete operations on database table.
CO171: Files manipulation and data access with ADO.Net.
CO172: Discuss additional Visual Basic controls.

Lab exercise based(504and505) on paper504-RDBMS with Oracle Lab Course based on Paper505:VisualProgramming

CO173: ExplainthefeaturesofdatabasemanagementsystemsandRelationalDatabase.
CO174: Design conceptual model so far database.
CO175: Retrieve any type of information from a database by formulating complex Queries in SQL.
CO176: Build indexing mechanisms for efficient retrieval of information from a database.
CO177: Apply skills in Design and Development of Software systems, Operating System, Database Management, Computer networks and Web Technologies.

Mini Project(507)

CO178: Students will be able to practice acquired knowledge within the chosen area of technology for project development.
CO179: Identify, discuss and justify the technical aspects of the chosen project with a comprehensive and systematic approach.

BCA-III(SEM-VI)
Strategic Management(601)

CO180: Explain the basic concepts, principles and practices associated with strategy formulation and implementation.
CO181: Assess the contribution of strategic eadership to managing the process of strategic change.
CO182: Discuss the crucially important role that the HRM function plays in the setting and implementation of an organization's strategy.
CO183: Demonstrate a clear understanding of the concepts, tools & techniques used by executives in developing and executing strategies and will appreciate its integrative and inter disciplinary nature.
CO184: Recognize the different stages of industry evolution and recommend strategies appropriate to each stage.
CO185: Develop their capacity to think and execute strategically.

Data Mining and Data Warehousing(602)

CO186: Design data ware house with dimensional modelling and apply OLAP operations.
CO187: Identifyappropriatedataminingalgorithmstosolverealworldproblems.

CO188: Benefit the user experience towards research, innovation and Integration

CO189: Describe the designing of Data Warehousing so that it can be able to solve the root problems.

CO190: Explain the various tools and techniques of Data Mining to solve the real time problems.

CO191: Characterize the kinds of patterns that can be discovered by association rule mining, classification and clustering.

Linux Operating System(603)

CO192: Explain basic concepts of Linux Operating System.

CO193: Familiar with Linux commands.

CO194: Discuss hell programming.

CO195: Recognize able with system administration.

CO196: Outline various types of servers.

CO197: Describe and apply various command line utilities.

Java Programming(604)

CO198: Enhance the knowledge of object-oriented programming using the Java programming language.

CO199: Implement, compile, test and run Java programs comprising more than one class, to address a particular software problem.

CO200: Demonstrate simple data structures like arrays in a Java program.

CO201: Discuss the concept of package, interface, multithreading and File handling in java.

CO202: Use of members of classes found in the Java API.

CO203: Explain the applets and exception handling mechanisms.

Lab Course based(605)onPaperno-603

CO204: Discovers UNIX structure, commands, and utilities.

CO205: Describe and understand the UNIX file system.

CO206: Write shell scripts in order to perform shell programming.

CO207: Gain knowledge about text processing utilities, process management and System Operation of UNIX.

Lab Course based(606)onPaperno.604

CO208: Student should know the model of object oriented programming and fundamental features of an object oriented language.

CO209: Student should know how to test, document and prepare a professional looking package for each business project.

CO210: Student have the ability to write a computer program to solve specified problems and to use the Java SDK environment to create, debug and run simple Java programs.

CO211: Student will be able to explain and develop programs for inheritance, multithreading, applets, exception handling and file handling.

Major Project(607)

CO212: Implement their ideas/real time industrial problem/current applications from their domain.

CO213: Develop plans with help of team members to achieve the project's goals.

CO214: Estimate and cost the human and physical resources required, and make plans to obtain the necessary resources.

CO215: Allocate roles with clear lines of responsibility and accountability and learn team work ethics.

CO216: Communication skills to effectively promote ideas, goals or products.

CO217: Design the software using concepts of SDLC and SE.