PROGRAME OUTCOMES (POs), PROGRAME SPECIFIC OUTCOMES (PSOs) & COURSE OUTCOMES (COs)

BACHELOR OF COMPUTER APPLICATION

(THREE YEAR PROGRAMME)

➢ VISION

The Vision of the Department is:

- To produce competent Software Professionals with strong values who are technically sound to accept the real world challenges.
- Visualizing the department as an academic distinction recognize for its total commitment superiority in technical education and research with holistic concern for quality in life, environment, society andethics through expanding the horizon.

➢ MISSION

The Mission of the Department is:

- To entail the empirical knowledge of a new generation of interdisciplinary aspirants who build bridges and innovate at the intersection of multiple scientific domains.
- To thrive for qualitative skills for better endurance in diverse and consistent growing technological environment.
- To provide an ecosystem conducive to exploring and learning computer applications.
- To inculcate strong national values and ethics in students.
- To promote a culture of innovative thinking and continuous learning in the department.

PROGRAM OUTCOMES (POs)

PO-1. To develop skilled and professionally motivated technocrats, equipped with critical reasoning and ethical values that fosters scientific temperament with a sense of social responsibility.

PO-2. To produce knowledgeable and competent human resources who are employable in all walk of life.

PO-3. To create, identify and implement appropriate techniques, resources, and modern engineering and IT tools.

PO-4. To impart expertise required for planning, designing and building complex software systems as well as provide support to automated systems. PO-5. To build caliber to tackle both personal and social challenges and improve the quality of life.

SEMESTER WISE SUBJECT LIST

B. C. A. Semester I

BCA -101	Essentials of Professional Communication
BCA -102	Principle of Management
BCA -103	Mathematics -I
BCA -104	Computer Fundamentals & Programing in C
BCA 105	Fundamentals of Environmental Sciences
BCA 106 P	Computer Application Lab
BCA 107 P	Programing in C Lab
BCA 108 P	Professional Communication Lab
BCA GP	General Proficiency

B. C. A. Semester II

BCA -201	Mathematics-II
BCA -202	Advanced Professional Communication
BCA -203	Digital Electronics and Computer Organization
BCA -204	Data structure and Computer Organization
BCA- 205	Accounting and Financial Management
BCA -206 P	Advanced Professional Communication Lab
BCA -207 P	Data Structure lab
BCA- 208 P	Digital Electronics and Computer Organization Lab
BCA -GP	General Proficiency

B. C. A. Semester III

BCA -301	Computer Based Numerical and Statistical Techniques
BCA -302	Object Oriented Programming using Java
BCA -303	Operating System
BCA -304	Management Information System
BCA- 305	Computer Architecture
BCA -306 P	Computer Based Numerical and Statistical Techniques Lab
BCA -307 P	Object Oriented Programming & Java Lab
BCA -308 P	Operating System Lab
BCA GP	General Proficiency

B. C. A. Semester IV

BCA -401	Discrete Mathematics
BCA -402	Business Economics
BCA -403	Computer Graphics and Multimedia System
BCA -404	Data Base Management System
BCA- 405	Software Engineering
BCA -406 P	Graphics and Multimedia System Lab
BCA -407 P	Data Base Management System Lab
BCA -408 P	Software Engineering Lab
BCA GP	General Proficiency

B. C. A. Semester V

BCA -501	Data Communication and Computer Network
BCA -502	Design and Analysis of Algorithm
BCA -503	Web design Concept
BCA -504	UNIX and Shell Programming
BCA -505	Elective-I
BCA -506 P	UNIX Lab
BCA -507 P	Web design Lab
BCA -508 P	Data Communication and Computer Network Lab
BCA -GP	General Proficiency

B. C. A. Semester VI

BCA -601	E-Commerce
BCA -602	Cyber Law and Internet Security
BCA -603	Mobile Computing
BCA -604	Elective-II
BCA -605P	Advanced Technology (Dot Net) Lab
BCA - Pro	Project
BCA- GP	General Proficiency

Course Outcome:

Pdf formatFULL COURSE OUTCOME.docx

Syllabus:

Pdf format

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B. C. A. Semester I

BCA-101

ESSENTIAL OF PROFESSIONAL COMMUNICATION

COURSE OUTCOMES (COs)

CO1: Students shall be able to understand English when it is spoken in various contexts and modify language to convey ideas to the audience clearly and concisely.

CO2: Students shall be able to speak intelligibly using appropriate word stress, sentence stress and elementary intonation patterns.

CO3: Students shall be able to write well-presented business document in the required format (Reports, Proposal, Business Letter, Basic E-mail etiquettes).

CO4: Students shall locate direct information with associative comprehension and convey ideas accurately with aspects of grammar and vocabulary

BCA -102

Principle of Management

COURSE OUTCOMES (COs)

CO-1. To identify, analyze and express one's own stance on social responsibility and ethics of business circumstances.

CO-2. To cogitate on evolution, functions and principles of Management, and comprehensively grasp managers' tasks such as planning, decision-making, directing, negotiating and problem-solving.

CO-3. To develop cognizance of the importance of human behavior and analyze the complexities associated with management of the group behavior in the organization.

CO-4. To understand the traits, dimensions, and styles of effective leaders and, the relationship between strategic, tactical, and operational plans for effective Management.

BCA -103

Mathematics –I

COURSE OUTCOMES (COs):

CO-1. Use matrices, determinants and techniques for solving systems of linear equations in the different areas of Linear Algebra, Solve Eigen value problems and apply Cayley Hamilton Theorem.

CO-2. Study the functions of more than one independent variable and calculate partial derivatives along with their applications

CO-3. Explore the idea for finding the extreme values of functions and integrate a continuous function of two or three variables over a bounded region.

CO-4. Understand Curl, divergence and gradient lines. Calculate line integral, surface integral and volume integral and correlate them with the application of Stokes, Green and Divergence theorem.

BCA -104

Computer Fundamentals & Programing in C

COURSE OUTCOMES (COs):

CO-1. Understand the basics of binary arithmetic, digital computer and operating system.

CO-2. Apply the concept of algorithm and flowcharts in programming.

CO-3. Understand about writing, compiling and executing a program in C language.

CO-4. Learn the fundamental building blocks of C Language like constants, variables, identifiers, operators, type conversion.

CO-5. To write programs in C-language that involves decisions and iterations.

CO-6. Understand the implementation of functions, arrays and pointers in C programming language.

BCA 105

Fundamentals of Environmental Sciences

COURSE OUTCOMES (COs):

CO-1. Get the information about environment, ecosystem and also about its functions like Food chain, Ecological pyramids etc.

CO-2. Get the complete information about EIA- Environmental Impact Assessment in which the student will get the knowledge about the projects and the process involved in getting the projects.

CO-3. Get the knowledge about the different types of resources like land, water, mineral and energy and also about the effects of environment by the usage of these resources. Also get the knowledge about the analysis of polluted water.

CO-4. Gain the knowledge about different types of pollution and their treatment techniques like waste water treatment, solid waste management etc.,

CO-5. Get the complete information about the all legal aspects of environment protection.

BCA 106 P

Computer Application Lab

BCA 107 P

Programing in C Lab

BCA 108 P

Professional Communication Lab

BCA GP

General Proficiency

B. C. A. Semester II

BCA -201

Mathematics-II

COURSE OUTCOMES (COs):

CO-1. Calculate surface area and volume and correlate them with the application of integration.

CO-2. Understand and implement the concept of differential equations and learn various methods to solve ordinary differential equations.

CO-3. Identify a range of techniques to form the partial differential equations (PDF) and solutions of standard linear and non-linear PDFs.

CO-4. Compute and interpret the results of Bivariate Regression and Correlation Analysis, for forecasting and investigating the relationships between them. Define and perform null hypothesis significance testing.

BCA -202

Advanced Professional Communication

COURSE OUTCOMES (COs):

CO1: The students shall possess better understanding of the four modes of literacy: writing, speaking, reading & listening.

CO2: The students shall write clear, organized, sophisticated, well-researched, and polished resume, curriculum vitae, business letters, proposals, reports and summary.

CO3: Students shall review the grammatical forms of English and the use of these forms in specific communicative contexts.

CO4: Students shall learn language details like pronunciation, grammar and vocabulary naturally when Literature (Essay and Poetry) is edged in as a text of language learning.

BCA -203

Digital Electronics and Computer Organization

COURSE OUTCOMES (Cos):

CO-1. Gain knowledge of different types of number systems, and their conversions.

CO-2. Design various logic gates and simplify Boolean functions.

CO-3. Design various flip flops, shift registers and determining outputs.

CO-4. Analyze, design and implement combinational logic circuits.

CO-5. Perform computer arithmetic operations.

CO-6. Understand the Control unit, memory design and I/O organization of computer system

BCA -204

Data structure and Computer Organization

COURSE OUTCOMES (Cos):

CO-1. Learn how to represent arrays, linked lists, stacks, queues in memory using the algorithms and their common applications.

CO-2. Understand the concept of recursion, application of recursion and its implementation and removal of recursion.

CO-3. Understand about various sorting and searching algorithms.

CO-4. Implement Trees and Graphs along with their applications to solve some real world problems.

BCA- 205

Accounting and Financial Management

COURSE OUTCOMES (COs):

CO-1. Understand the role of accounting and its limitations.

CO-2. Prepare financial statements in accordance with Generally Accepted Accounting Principles.

CO-3. Support at a basic level the recording and reporting of financial information for business.

CO-4. Demonstrate an understanding the Tally in accounts.

CO-5. Demonstrate knowledge of each step in the accounting cycle.

BCA -206 P

Advanced Professional Communication Lab

BCA -207 P

Data Structure lab

BCA- 208 P

Digital Electronics and Computer Organization Lab

BCA -GP

General Proficiency

B. C. A. Semester III

BCA -301

Computer Based Numerical and Statistical Techniques

COURSE OUTCOMES (COs):

CO-1. Apply numerical methods to obtain the approximate solutions to the linear and nonlinear transcendental and polynomial equations and find error.

CO-2. Identify numerical methods for various mathematical operations and tasks, such as interpolation formulae like forward, backward, and divided difference formulae.

CO-3. Apply the appropriate techniques for numerical differentiation and integration problems.

CO-4. Design the numerical solution of initial value problems of the ordinary differential equations with implicit and explicit methods as appropriate.

CO-5. Work numerically on the partial differential equations using different methods through of finite difference

BCA -302

Object Oriented Programming using Java

COURSE OUTCOMES (COs):

CO-1. Understand the basic concepts of object-oriented modeling and designing.

CO-2. Write, compile, run, and test simple object-oriented Java programs.

CO-3. Understand the use of inheritance, arrays and Interface in java.

CO-4. Implement the concept of exception handling, threads and packages

BCA -303

Operating System

COURSE OUTCOMES (COs):

CO-1. Analyze various process scheduling Algorithms and their comparisons.

CO-2. Understand the process synchronization problems.

CO-3. Implement the concept of deadlock detection and avoidance.

CO-4. Compare and contrast various Memory management schemes and Page replacement policies.

CO-5. Understand the concept of File and Disk management.

BCA -304

Management Information System

COURSE OUTCOMES (COs:

CO-1. Understand fundamental of information system.

CO-2. Visualize structure of management information system & decision support system.

CO-3. Learn various business application of information system.

CO-4. Explore ERP, supply chain management and CRM based information system

BCA- 305

Computer Architecture

COURSE OUTCOMES (COs):

CO-1. Understand the instruction types and different architectures of a computer.

CO-2. Learn about parallel computing and various performance metrics and measure.

CO-3. Understand about pipelining concept and its scheduling.

CO-4. Analyze partitioning & scheduling of programme and get a detailed explanation of its flow mechanism.

BCA -306 P

Computer Based Numerical and Statistical Techniques Lab

BCA -307 P

Object Oriented Programming & Java Lab

BCA -308 P

Operating System Lab

BCA GP

General Proficiency

B. C. A. Semester IV

BCA -401

Discrete Mathematics

COURSE OUTCOMES (COs):

CO-1. Understand the concept of Set theory, relation &function.

CO-2. Understand the concept of algebraic structures such as homomorphism, isomorphism and auto-morphism of groups.

CO-3. Explore and analyze partial order sets and lattices.

CO-4. Explore the concept of propositional logic and predicate logic.

BCA -402

Business Economics

COURSE OUTCOMES (COs):

CO-1. To understand and incorporate principles of Business Economics and the theory of supply and demand for economic problems prevalent in the market.

CO-2. To identify the various determinants of firm's demand for factor services, the relationship between investment and savings, and demonstrate investment multiplier.

CO-3. To critique the various types of investment function analysis and understand the elements of social cost benefit analysis.

CO-4. To study the process of calculating national income, identify its components (GDP, GNP, NNP) and demonstrate circular flow of income, monetary policy and international trade

BCA -403

Computer Graphics and Multimedia System

COURSE OUTCOMES (COs):

CO-1. Learn about working of display systems.

CO-2. Execute various Scan Conversion algorithms in laboratory so as to draw Graphics primitives.

CO-3. Familiarize with 2D and 3D graphic concepts.

CO-4. Create 2D objects using Geometrical Transformations.

CO-5. Describe the types of media and define multimedia system.

CO-6. Describe the stages of a project in multimedia and its hardware and software requirements.

BCA -404

Data Base Management System

COURSE OUTCOMES (COs):

CO-1. Understand database concepts, structures and query language.

CO-2. Understand the E R model and relational model.

CO-3. Design and build a simple database system and demonstrate competence with the fundamental tasks involved with modeling, designing, and implementing a DBMS.

CO-4. Create and manage database with all integrity constraints.

CO-5. Refine the schema of database by applying normal forms.

CO-6. Understand concept of transaction processing and concurrency control.

BCA- 405

Software Engineering

COURSE OUTCOMES (COs):

CO-1. Understand the basic concepts of software engineering.

CO-2. Understand the requirement analysis and importance of SRS documentation.

CO-3. Understand the designing principles of software product.

CO-4. Learn about the working environment of CASE tools.

CO-5. Apply various software measures and metrics for estimation.

BCA -406 P

Graphics and Multimedia System Lab

BCA -407 P

Data Base Management System Lab

BCA -408 P

Software Engineering Lab

BCA GP

General Proficiency

B. C. A. Semester V

BCA -501

Data Communication and Computer Network

COURSE OUTCOMES (COs):

CO-1. Understand basic computer network technology.

CO-2. Identify different types of network topologies and protocols.

CO-3. Understand the layers of the OSI model and TCP/IP.

CO-4. Understand the concept of IP addressing, subnetting and routing mechanisms.

BCA -502

Design and Analysis of Algorithm

COURSE OUTCOMES (COs):

CO-1. Implementation of various sorting algorithm and their comparisons.

CO-2. Analyze the concept of Divide & Conquer and Greedy techniques.

CO-3. Implementation of Dynamic Programming concept in solving various problems.

CO-4. Understand the concepts such as NP-completeness and randomized algorithms.

BCA -503

Web design Concept

COURSE OUTCOMES (COs):

CO-1. Understand the internet related concepts that are vital in understanding web application development.

CO-2. Analyze and apply the role of markup languages like HTML, DHTML, and XML in the workings of the web and web applications.

CO-3. Programming web pages with JavaScript.

CO-4. Design and implement dynamic web pages using client side programming Java Script and also develop the web application using servlet and JSP.

BCA -504

UNIX and Shell Programming

COURSE OUTCOMES (COs):

CO-1. Describe UNIX operating system commands.

CO-2. Understand the UNIX Architecture, File systems and use of basic Commands.

CO-3. Understand and analyze UNIX System calls, Process Creation, Control & Relationship.

CO-4. Understand Shell Programming and to write shell scripts.

BCA -505

Elective-I (Information System: Analysis and Design & Implementation)

COURSE OUTCOMES (COs):

CO-1. Describe principles, concepts and practice of System Analysis and Design process.

CO-2. Explain the processes of constructing the different types of information systems.

CO-3. Understand the various software development life cycle models and system documentation.

CO-4. Apply object oriented concepts to capture a business requirement.

CO-5. Learn the concept of system testing, evaluation and performance.

BCA -506 P

UNIX Lab

BCA -507 P

Web design Lab

BCA -508 P

Data Communication and Computer Network Lab

BCA -GP

General Proficiency

B. C. A. Semester VI

BCA -601

E-Commerce

COURSE OUTCOMES (COs):

CO-1. Understand the foundations and importance of E-commerce.

CO-2. Understand the concept of Mobile commerce.

CO-3. Analyze the importance of encryption on E-commerce.

CO-4. Determining the effectiveness of electronic payments as an emerging financial instrument.

BCA -602

Cyber Law and Internet Security

COURSE OUTCOMES (COs):

CO-1. Understand the social and intellectual property issues emerging from cyber space.

CO-2. Explore the legal and policy developments in various countries to regulate cyber space.

CO-3. Understand the Intellectual Property Rights, Domain Names and Trademark Dispute.

CO-4. Learn about developing secure information system and security policies to prevent criminal activity on the Internet

BCA -603

Mobile Computing

COURSE OUTCOMES (COs):

CO-1. Explain the principles and theories of mobile computing technologies.

CO-2. Describe infrastructures and technologies of mobile computing technologies.

CO-3. Learn the concept of cellular network and GSM.

CO-4. List out the data management issues in mobile computing.

CO-5. Understand the concept of Ad-hoc Network and Routing Protocols.

BCA -604

Elective-II (Optimization Techniques)

COURSE OUTCOMES (COs):

CO-1. Understand the theory of optimization methods and algorithms developed for solving various types of optimization problems.

CO-2. Develop and promote research interest in applying optimization techniques in problems of Engineering and Technology.

CO-3. Apply the mathematical results and numerical techniques of optimization theory to concrete Engineering problems.

BCA -605P

Advanced Technology (Dot Net) Lab

BCA - Pro

Project

BCA- GP

General Proficiency