Program Outcomes for BCA

PO 1: Apply mathematics and computing fundamental and domain concepts to find out the solution of defined problems and requirements. (Computational Knowledge)

PO 2: Use fundamental principle of Mathematics and Computing to identify, formulate research literature for solving complex problems, reaching appropriate solutions. (Problem Analysis)

PO 3: Understand to design, analyze and develop solutions and evaluate system components or processes to meet specific need for local, regional and global public health, societal, cultural, and environmental systems. (Design/Development of Solutions)

PO 4: Use expertise research-based knowledge and methods including skills for analysis and development of information to reach valid conclusions. (Conduct Investigations of Complex Computing Problems)

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PO 6: Exhibiting ethics for regulations, responsibilities and norms in professional computing practices. (Professional Ethics)

PO 7: Enlighten knowledge to enhance understanding and building research, strategies in independent learning for continual development as computer applications professional. (Life-long Learning)

PO 8: Establishing strategies in developing and implementing ideas in multi- disciplinary environments using computing and management skills as a member or leader in a team. (Project Management and Finance)

PO 9: Contribute to progressive community and society in comprehending computing activities by writing effective reports, designing documentation, making effective presentation, and understand instructions. (Communication Efficacy)

PO 10: Gain confidence for self and continuous learning to improve knowledge and competence as a member or leader of a team. (Individual and Teamwork)

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Program Specific Outcomes (PSO):

1) Students will 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.
2) 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.
3) Student will able to know various issues, latest trends in technology development and thereby innovate new ideas and solutions to existing problems.

Course Outcomes:

BCA 101: Computer Fundamental & Office Automation

CO 1: Recognize the importance of computer in education and career,
CO 2: Understand the basic knowledge of computer,
CO 3: Perform common functional operations in windows. Identify software and hardware
CO 4: Understand Testing, errors and debugging,
CO 4: Understand the usage of Computer,
CO 5: Understand windows directory
CO 6: Understand the components of office automation.
CO 7: Perform operations using MS Word, Excel, PowerPoint, Surf details through Internet,
CO 8: Understand and discuss about the use of Office Package and internet in daily life

BCA 102: Programming Principle & Algorithm

CO 1: Read, understand and trace the execution of programs written in C language.
CO 2: Write the C code for a given algorithm.
CO 3: Implement Programs with pointers and arrays, perform pointer arithmetic and use the pre-processor.
CO 4: Write programs that perform operations using derived data types.

BCA 103: Principle of Management

CO1: Understand the concepts related to Business.
CO2: Define management and explain the characteristics of Managers in organizations
CO3: Demonstrate the roles, skills and Levels of management.
CO4: List and describe major management theories as represented through the history of modern management thought.

CO5: Discuss ethics and social responsibility in the context of management.
CO6: To analyze and discuss planning, organizing, controlling, decision making, communication, motivation, leadership, Management of Change.
CO7: Develop theoretical and critical thinking skills relevant to both academic and management practice.
CO8: To promote group interaction through class discussion.

BCA 104: Business Communication

CO 1: To participate in an online learning environment successfully.

CO 2: To distinguish among various levels of organizational communication and communication barriers while developing an understanding of Communication as a process in an organization.

CO 3: To draft effective business correspondence with brevity and clarity.

CO 4: To stimulate their Critical thinking by designing and developing clean and lucid writing skills.

CO 5: To demonstrate their verbal and non-verbal communication ability through presentations.

BCA 105: Mathematics 1

CO 1: Find out Eigen values and Eigen vectors.

CO 2: Apply the concepts of limit, continuity and differentiability.

CO 3: Apply Taylors and Maclaurin's theorem to find the expansion of functions as infinite series.

CO 4: Evaluate the integrals of complex functions and to find area, volume.

CO 5: Apply the concept of vector algebra, scalar triple product, vector triple product.

BCA 201: C Programming

CO 1: Understanding a functional hierarchical code organization.
CO 2: Ability to define and manage data structures based on problem subject domain.
CO 3: Ability to work with textual information, characters and strings.
CO 4: Ability to work with arrays of complex objects.

CO 5: Understanding a concept of object thinking within the framework of functional model.

CO 6: Understanding a concept of functional hierarchical code organization.

CO 7: Understanding a defensive programming concept. Ability to handle possible errors during program execution.

BCA 202: Digital Electronics & Computer Organization

CO 1: An ability to understand theory of Digital Design and Computer Organization to provide an insight of how basic computer components are specified.

CO 2. An ability to understand the functions of various hardware components and their building blocks.

CO 3. An ability to understand and appreciate Boolean algebraic expressions to digital design.

CO 4. An in depth understanding of realization of different combinational/sequential circuits.

CO 5. An in depth understanding of different stages of an instruction execution.

CO 6: An in-depth understanding o how different hardware components are related and work in communication

CO 7: An ability to understand computer buses and input/output peripherals.

BCA 203: Organization Behaviour

CO1: Demonstrate the applicability of the concept of organizational behaviour to understand the behaviour of people in the organization.

CO2: Demonstrate the applicability of analyzing the complexities associated with management of individual behaviour in the organization.

CO3: Analyze the complexities associated with management of the group behaviour in the organization.

CO4: Demonstrate how the organizational behaviour can integrate in understanding the motivation behind behaviour of people in the organization.

BCA 204: Financial Accounting & Management

CO 1. Prepare consolidated financial statements using international accounting standards.

CO 2. Manage the financial operations including revenues, expenses, assets, liabilities and capital.

CO 3. To understand and be able to calculate the various ratios through financial statements and its impact on the short and long term position of the firm.

CO 4. Determine the long term sources of finance to fulfil the long term finance needs of organization.

CO 5. Demonstrate the applicability of the concept of Financial Management to understand Capitalization and Capital Structure.

CO 6. Determine the break-even point and analyze the profit on large volume of output by differentiating between fixed and variable costs.

CO 7. Improve the business management by recording all the costs incurred in conducting the business.

CO 8. Evaluate and determine the organization's motives for holding cash, Cash budget, Managing Inventory and Receivables.

CO 9: Apply accounting and financial information for decision making and achievement of business goals.

BCA 205: Mathematics – II

CO 1: Ability to learn the basic concepts about relations, functions and to draw different diagrams like Lattice, Hasse diagrams.
CO2: Identify the application of partial differentiation and apply for evaluating maxima, minima.
CO 3: Evaluate 3D Geometry.
CO 4: Illustrate the working methods of multiple integral and apply for finding area, Volume.

BCA 301: Object Oriented Programming Using C++

CO 1: Identify importance of object oriented programming and difference between structured oriented and object oriented programming features.

CO 2: Able to make use of objects and classes for developing programs.

CO 3: Able to use various object oriented concepts to solve different problems.

BCA302: Data Structures Using C & C++

CO1: Design correct programs to solve problems.
CO 2: Choose efficient data structures and apply them to solve problems.
CO 3: Analyze the efficiency of programs based on time complexity.
CO 4: Prove the correctness of a program using loop in-variants, pre-conditions and post-conditions in programs.
CO 5: Implement abstract data types using arrays and linked list.
CO 6: Apply the different linear data structures like stack and queue to various computing problems.
CO 7: Implement different types of trees and apply them to problem solutions.
CO 8: Analyze the various sorting and searching algorithms.

BCA 303: Computer Architecture and Assembly Language

CO 1: Identify and explain the building blocks of computer, instruction execution cycle
CO 2: Knowledge about different CPU organizations
CO 3: Recognize addressing modes, data/ instruction formats
CO 4: Knowledge about different micro operations that are needed for an instruction execution
CO 4: Explain various I/O transfer modes, interrupt, and memory interface.
CO 5: Knowledge of different arithmetic operations like addition, subtraction, multiplication, division based on algorithms.
CO 6: Case study of Intel 8085 microprocessor, overview, architecture, programming involving loop, subroutine, I/O etc.

BCA 304: Business Economics

CO 1: Gain basic knowledge of the operation of the business economics.

CO 2: Apply the different concepts of demand, cost and production.

CO 3: Employ marginal analysis for decision making

CO 4: Understand and gain analytical skills for understanding market structures.

CO5: Apply an ethical understanding and perspective to business situations.

BCA 305: Elements of Statistics

CO 1: Organize, manage and present data.

CO 2: Analyze statistical data graphically using frequency distributions and cumulative frequency distributions.

CO 3: Analyze statistical data using measures of central tendency, dispersion and location.

CO 4: Use the basic probability rules, including additive and multiplicative laws, using the terms, independent and mutually exclusive events.

CO 5: Translate real-world problems into probability models.

BCA 401: Computer Graphics and Multimedia Application

CO 1: Understand the basics of computer graphics, different graphics systems and applications of computer graphics.
CO 2: Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.
CO 3: Use of geometric transformations on graphics objects and their application in composite form.

CO 4: Extract scene with different clipping methods and its transformation to graphics display device.

CO 5: Explore projections and visible surface detection techniques for display of 3D scene on 2D screen.

CO 6: Render projected objects to naturalize the scene in 2D view and use of illumination models for this.

BCA 402 Operating System

CO 1: Understand the fundamental concepts of operating systems and their structure, processes, and threads.

CO 2: Able to solve questions based on algorithms for process scheduling for a given specification of CPU utilization, Throughput, Turnaround Time, Waiting Time and Response Time.

CO 3: Understand and analyze the memory management techniques.

CO 4: Apply page replacement algorithms to resolve the issues in virtual memory.

CO 5: Acquire knowledge of files and I/O management system.

BCA 403: Software Engineering

CO 1: Students will be able to decompose the given project in various phases of a lifecycle.

CO 2: Students will be able to choose appropriate process model depending on the user requirements.

CO 3: Students will be able perform various life cycle activities like Analysis, Design, Implementation, Testing and Maintenance.

CO 4: Students will be able to know various processes used in all the phases of the product.

CO 5: Students can apply the knowledge, techniques, and skills in the development of a software product.

BCA 404: Optimization Techniques

CO 1: Be able to understand the application of OR and frame a LP Problem with solution –graphical and simplex method

CO 2: Be able to build and solve Transportation and Assignment problems using appropriate method.

CO 3: Be able to design and solve simple models of PERT-CPM to improve decision making and develop critical thinking and objective analysis of decision problems.

CO 4: Be able to solve simple problems of replacement and implement practical cases of decision making under different business environments.

BCA 405: Mathematics III

CO 1: Find out nth roots of complex numbers.
CO 2: Apply the concepts of convergence of sequence and series, find out series sum.
CO 3: Apply the concept of vector calculus, Find out Directional Derivatives, Divergence and Curl.
CO 4: Find out Fourier series of periodic functions.
CO 4: To solve various differential equations and to apply these analytical methods in different engineering applications.

BCA 501: Introduction to DBMS

CO 1: Will be able to comprehend and evaluate the role of database management systems in information technology applications within organizations.
CO 2: Effectively explains the basic concepts of databases and data models.
CO 3: Develops an Entity-Relationship model based on user requirements.
CO 4: Designs SQL queries to create database tables and make structural modifications.
CO 4: Constructs queries with relational algebra.
CO 5: Explains the concurrency control and recovery algorithms.

BCA 502: Java Programming and Dynamic Webpage Design

CO 1: Write, compile, run, and test simple object-oriented Java programs demonstrating use of good object-oriented design principles including encapsulation and information hiding; primitive and reference data types.
CO 2: Understand and apply in programs the concept of inheritance, package and multithreading. Identify and fix common exception issues in code.
CO 3: Demonstrate the use of a variety of basic AWT components; file-based I/O; and one-dimensional arrays.
CO 4: Understand the concept of events and how to handle the event-driven programming and also networking. Develop JDBC application of elementary level.
CO 5: Write a static webpage using HTML. Use various tags, tables and image formats.
CO 6: Set up the web server. Understand HTTP and client-server architecture. Understand the potential of Servlets. Apply the methods of Servlets to retrieve and sending information, tracking session and database connectivity.
CO 7: Create web pages of dynamic and static nature using JSP and HTML. Create JSP forms and gather information using forms. Use JSTL and custom tag libraries.

BCA 503: Computer Network

CO 1: Build an understanding of the fundamental concepts of data communication and computer networking.
CO 2: Understand how errors detected and corrected that occur in transmission
CO 3: How collisions to be handled when many stations share a single channel
CO 4: Know about routing mechanisms and different routing protocols
CO 5: Understand transport layer functions
CO 6: Know about different application layer protocols

BCA 504: Numerical Methods

CO 1: Apply Numerical methods to find out solution of algebraic and transcendental equations.
CO 2: Apply various Interpolation techniques to interpolate the complicated functions for given data into much simpler once like polynomials.
CO 3: Numerically differentiate and integrate a tabular function whenever analytical methods are not applicable.
CO 4: Solve system of linear equations in large size with the help of different iterative methods.
CO 5: Solve the ordinary differential equations using different numerical methods.

BCA 601: Computer Network security

CO 1: Identify the security issues in the network and resolve it.

CO 2: Analyse the vulnerabilities in any computing system and hence be able to design a security solution.

CO 3: Evaluate security mechanisms using rigorous approaches by symmetric and asymmetric ciphers and Hash functions.

CO 4: Demonstrate various network security applications, IPSec, Firewall, IDS, Web Security, Email Security and Malicious software etc.

BCA 602: Information System: Analysis Design & Implementation

CO 1: Perform standard analysis and design of structural systems following codes and modern practices.
CO 2: Determine deformations and stresses in structural systems under the action forces: gravity, wind, fire, earth pressure and flood.
CO 3: Apply basic technical concepts to identify, analyze and solve technical problems involving structural, geotechnical, and material behaviour under forces and fire.
CO 4: Select appropriate engineering materials and practices.
CO 5: Employ productivity software to solve technical problems.
CO 6: Utilize modern surveying methods for land measurement and/or construction layout.

CO 7: Utilize graphic techniques to produce engineering documents.
CO 8: Conduct standardized field and laboratory testing on civil engineering materials.
CO 9: Estimate material quantities for technical projects.
CO 10: Plan and prepare design and construction documents, such as specifications, contracts, change orders, engineering drawings, and construction schedules.
CO 11: Perform economic analyses and cost estimates related to design, construction, operations and maintenance of systems in the civil technical specialties.
CO 12: Work effectively on teams.
CO 13: Communicate effectively.
CO 14: Engage in lifelong learning.
CO 15: Understand professional, ethical and social responsibilities.
CO 16: Respect diversity and possess knowledge of contemporary professional, societal and global issues;
CO 17: Will be committed to quality, timeliness, and continuous improvement.

BCA 603: E-Commerce

CO 1: Analyse the impact of E-commerce on business models and strategy.
CO 2: Describe the major types of E-commerce.
CO 3: Explain the process that should be followed in building an E-commerce presence.
CO 4: Describe how procurement and supply chains relate to B2B E-commerce.
CO 5: Demonstrate the various approaches in Electronic Payment System
CO 6: Evaluate legal issues to privacy such as Internet Indecency, Encryption policies and other Legal issues.

BCA 604: Knowledge Management

CO 1: Clearly characterize types of knowledge and structure of knowledge management solutions.
CO 2: Describe key components of KM solutions: infrastructure, mechanisms and technologies, systems and processes.
CO 3: Analyze and evaluate: organizational impacts of KM, factors influencing KM.
CO 4: Demonstrate understanding of importance of intellectual capital in gaining a competitive advantage of organization.
CO 5: Apply appropriate tool for information and knowledge visualization, representation and structuring.