DEPARTMENT OF BACHELOR COMPUTER APPLICATIONS

PROGRAM OUTCOME	
PO1	An ability to apply knowledge of computer programming.
PO2	An ability to enhance not only comprehensive understanding of the theory but its application too in diverse field.
PO3	The program prepares the young professional for a range of computer applications, computer organization, Software Engineering, Web development, Database management.
PO4	An ability to design a computing system to meet the desired needs within realistic constraints such as safety, security and applicability in multidisciplinary teams.
PO5	Students will be able to apply skills and techniques necessary for innovative software solutions.
PO6	Students will be able to Program easy-to-moderate level programs on their own.

PROGRAM SPECIFIC OUTCOME	
PSO1	The field provides jobs not in private sector but also in Government organisations like KVS, NVS, Banking, and Indian Army in IT Department, etc.
PSO2	Develop programming skills, networking skills, learn applications, packages, programming languages and modern techniques of IT
PSO3	Students can be Software Engineer, Web developer, junior Programmer, System Administrator, Data Operator, Stenographer, Software Testing.
PSO4	Students can start their future by freelancing and they can develop their own software and applications.
PSO5	Understanding of the scientific and management principles and apply these to one's own work, as a member and leader in a team, to manage projects.
PSO6	Get skill and info not only about computer and information technology but also in common, organization and management
PSO7	Good understanding of Nurture problem solving skills, thinking and number theory.

COURSE OUTCOME

I Semester

Computer & Programming Fundamentals (BCA-101)

CO1	Students will be able to learn Generations of Computers, Applications of Computers in various fields.
CO2	Students will be able to learn Computers in different categories based on their capabilities. Identify computer hardware and peripheral devices.
CO3	Summarized view of operating system. Introduction of computer virus.
CO4	Students will be able to learn about converter:- Compilers, Interpreter, Assembler.
CO5	Students will be made familiar with the application software. Learn about Linker-Loader, Structured Programming concepts, an introduction to Computer Networking.

PC Software (BCA-102)

CO1	MS-Windows, Basics of Windows, Components, icons, file and folders, control panel, display properties, hardware, screen saver, and appearance using windows.
CO2	An overview on MS-Word.
CO3	An overview about MS-Excel.
CO4	An Overview about MS-PowerPoint presentation.

Mathematics (BCA-103)

CO1	Reason mathematically about basic discrete structure such as numbers, sets, used in computer science.
CO2	Formulate limit, continuity, and differentiability.
CO3	Familiar with Determinants and Matrices.
CO4	Demonstrate a working knowledge. Definite and Indefinite integrals.
CO5	Learn about sampling methods.

Logical Organization of computer-1 (BCA-104)

CO1	Students will be able to understand the structure, function and characteristics of computer systems, design of the various functional units and components of computers.
CO2	Expose students to the basic architecture of processing, memory and i/o organization in a computer system.
CO3	Students will be able to apply the knowledge of combinational logical circuits to design computer architecture.
CO4	Students will be able to understand the design and analysis procedures using in computer system.
CO5	Students will understand about the digital codes, logic gates and circuits.

II Semester

C Programming (BCA-106)

CO1	Ability to design and develop Computer programs, analyzes, and interprets the concept of pointers, declarations, initialization, operations on pointers and their usage. Able to define data types and use them in simple data processing applications also he/she must be able to use the concept of array of structures. Student must be able to define union and enumeration user defined data types.
CO2	Students will acquire knowledge of C language. Students will learn to implement the algorithms and draw flowcharts.
CO3	To be able to develop C programs based on windows.
CO4	Develop confidence and ability for life-long learning needed for Computer language.

Logical Organization of computer-2 (BCA-107)

CO1	Realize the sequential logic circuits by using various logical blocks.
CO2	Design synchronous counters and develop sequential circuit applications using flip-flop and registers.
CO3	Understand the fundamentals of different instruction sets, architecture and their relationship to the CPU design.
CO4	Understand the principals and the implementation of computer arithmetic.
CO5	Learn about primary and secondary storage system.

Mathematical Foundations of Computer Science (BCA-108)

CO1	Know more about Graphs and Algorithms.
CO2	Learn the ability to sort the things in easy ways.
CO3	Knowledge about searching through different search algorithms.
CO4	Develop and maintain problem solving skills.
CO5	Have experience using technology to address mathematical ideas.

System Analysis and Design (BCA-109)

CO1	Employ productivity software to solve technical problems.
CO2	Apply basic technical concepts to identify, analyse and solve technical problems involving structural, geotechnical, and material behaviour
CO3	Perform economic analyses and cost estimates related to design, construction, operations and maintenance of systems in the civil technical specialties.
CO4	Work effectively on teams, communicate effectively, Engage in lifelong learning
CO5	Will be committed to quality, timeliness, and continuous improvement.

III Semester

Introduction to operating system (BCA-201)

CO1	Gain extensive knowledge on principles and modules of operating systems.
CO2	To acquire the knowledge of Process Management, Process Synchronization, and the mechanisms to handle the Deadlock.
CO3	Ability to understand Paging concept, memory management and virtual memory in detail.
CO4	Compare performance of processor scheduling algorithms - produce algorithmic solutions to process synchronization problems.
CO5	To study about Protection and security mechanisms. Case studies helps the students to know the implementation part of Windows and Linux operating systems.

Data Structure-1 (BCA-202)

CO1	Students will be able to learn about data types and how data can be stored in memory. To Understand the applications of data structures.
CO2	Will be able to learn and implement 1D-Arrays, multidimensional Arrays and Linked list. Also learn and implement various operations on array and linked list.
CO3	To solve complex applications using structured programming methods
CO4	Learn and implement various operation on Stack and Queue, Dequeue. Also learn about applications of stack.
CO5	To develop skills to apply appropriate data structures in problem solving.

Introduction to Database Management System (BCA-203)

CO1	Will be able to understand the importance of Database and the Architecture & Modelling of Database.
CO2	Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL
CO3	Learn brief introduction to Structured Query Language, Backup and Recovery of databases.
CO4	Design ER-models to represent simple database application scenarios
CO5	Will be able to design Commercial database applications and formulate SQL queries on data.

Communication Skills (English)

CO1	Demonstrate critical and innovative thinking
CO2	Display competence in oral, written, and visual communication.
CO3	Apply communication theories. Show an understanding of opportunities in the field of communication.
CO4	Distinguish different communication process and its practical application .
CO5	More effective written communication.

IV Semester

Web Designing (BCA-206)

CO1	Students learn HTML tags and JavaScript Language programming concepts and techniques.
CO2	Students will be able to develop the ability to logically plan and develop web pages.
CO3	Students will be able to learn to write, test, and debug web pages using HTML and JavaScript.
CO4	Students will be able to develop a fully functioning website and deploy on a web server.

Data Structure -II (BCA-207)

CO1	Learn about trees and will be able to implement all the operations on tree.
CO2	Will be able to understand and implement shortest path algorithms.
CO3	Describe the hash function and concepts of collision and its resolution methods and solve problem involving graphs, trees and heaps.
CO4	Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data.

Object Oriented Programming Using C++ (BCA-208)

CO1	Describe the procedural and object-oriented paradigm with concepts of streams, classes, functions, data and objects.
CO2	Understand dynamic memory management techniques using pointers, constructors, destructors, etc
CO3	To describe and use software tools in the programming process.
CO4	After completion of this course, student will be able to Identify importance of object-oriented programming and difference between structured oriented and object-oriented programming features
CO5	Apply virtual and pure virtual functions and complex programming situations.

Software Engineering (BCA-209)

CO1	Students will learn how to apply the software engineering lifecycle by demonstrating competence in communication, planning, analysis, design, construction, and deployment.
CO2	Students will be able to understand the process of Software development and plane the Software development.
CO3	Will understand and implement the coding, debug a software, test a software.
CO4	They will have the ability to use the techniques and tools necessary for engineering practice.

V Semester

Management Information System (BCA-301)

CO1	Will be able to analyse a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
CO2	Design, implement and evaluate a computing based solution to meet a given set of computing requirements in the context of the program's discipline.
CO3	Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
CO4	Support the delivery, use, and management of information systems within an information systems environment.

CO5	Communicate effectively in a variety of professional contexts.

Computer Graphics (BCA-302)

CO1	Understand the basics of computer graphics, different graphics systems and applications of computer graphics and discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.
CO2	Use of geometric transformations on graphics objects and their application in composite form.
CO3	Extract scene with different clipping methods and its transformation to graphics display device and explore projections and visible surface detection techniques for display of 3D scene on 2D screen.
CO4	Render projected objects to naturalize the scene in 2D view and use of illumination models for this.

Data Communication and Networking (BCA-303)

CO1	Understand the concepts of how computers communicate and Be familiar with the architecture of networks.
CO2	Understand and explain Data Communications System and its components. Identify the different types of network topologies and protocols
CO3	Will be able to understand the concept of networking on basis of OSI and TCP/IP models.
CO4	Understand network security and define various protocols such as FTP, HTTP, Telnet, DNS.
CO5	State the fundamentals related to network security and basics of IPv6 and IPsec and explain various protocols related to internet key exchange and study Adhoc network and its protocols.
CO6	Define various examples of wireless communication system, standards related to 2G and 3G wireless networks and design wireless mobile network according to parameters such as frequency reuse, handoff strategies and system capacity.

Visual Basics (BCA-304)

CO1	Will be able to understand an overview of computers and computer programming.
CO2	The students will be able to explain the concepts of windows programming, write pseudo code for windows program.
CO3	Understand the concept of data-driven program execution flow control in Visual Basic programming.
CO4	Students develop program using Visual Basic, develop program using VC++ and develop real time applications using VB and VC++.
CO5	Students code visual programs by using Visual Basic work environment, and prepare various projects by using visual programming, manage and analyze prepared project with programs.

VI Semester

E-Commerce (BCA-306)

CO1	Will be able to explain technologies supporting e-commerce, including Web services and electronic payment systems.
CO2	Will be able to explain enablers and issues in business-to-consumer e-commerce.
CO3	Will be able to describe scenarios for B2B e-commerce, including SCM, CRM and EDI.
CO4	Explain policy and regulatory issues in E-commerce.

Object Technologies & Programming using Java (BCA-307)

CO1	Will be able to use the syntax and semantics of java programming language and basic concepts of OOP.
CO2	Develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages.
CO3	Apply the concepts of Multithreading and Exception handling to develop efficient and error free codes.
CO4	Design event driven GUI and web related applications which mimic the real word scenarios.
CO5	They will also learn to design Applet Programming. This course help students to develop small Java application Projects.

Artificial Intelligence (BCA-308)

CO1	The main research topics in A.I include: Problem Solving, Reasoning, Planning
CO2	Design and evaluate conversational interfaces for different users and context of use.
CO3	Design an interface to improve humans in real time, decision making.
CO4	Analyse the implications of applying AI systems to organisations and future of work.
CO5	Natural language understanding, computer vision, automatic programming, machine learning, and so on.

Introduction to .Net (BCA-309)

CO1	Will be able to understand the Microsoft .NET Framework and ASP.NET page structure.
CO2	Design web application with variety of controls, and access the data using inbuilt data access tools.
CO3	Will be able understand inheritance & polymorphism concepts.
CO4	Will be able to develop secured web application