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	CO5:Effectively document Android application code and Linux shell scripts, and create comprehensive reports as record.
BCS6B17 (Project Work or Research Methodology Paper) and Industrial Visit	CO1:Apply and create skills in planning and executing projects, including setting objectives, defining scope, creating timelines, and managing resources effectively CO2:create and formulate project objectives clearly, demonstrating a deep understanding of the chosen topic. CO3 :Apply critical thinking skills to analyze and interpret data, or project outcomes, drawing meaningful conclusions. CO4:Effectively document the project work, presenting comprehensive reports that adhere to academic and professional standards. CO5 To apply the implementation level knowledge and interaction with industry

Department of Computer Science

BATCHLOR OF COMPUTER APPLICATION

Programme Outcomes

PO1	**Critical Thinking**: Take informed actions after identifying the assumptions that frame students' thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at their ideas and decisions (intellectual, organisational, and personal) from different perspectives.
PO2	**Effective Communication**: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
PO3	**Problem Solving**: Understand and solve problems of relevance to society to meet the specified needs using the knowledge, skills, and attitudes acquired.

PO4	**Effective Citizenship**: Demonstrate empathetic social concern, equity-centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
PO5	**Environment and Sustainability**: Understand the issues of environmental contexts and sustainable development
PO6	**Self-directed and Life-long Learning**: Acquire the ability to engage in independent and life-long learning in the broadest context of socio-technological changes
PO7	**Social interaction**: Elicit the views of others, mediate disagreements, and help reach conclusions in group settings.
PO8	**Ethics**: Recognize different value systems, including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

Programme Specific Outcomes(PSO)-B.Sc Computer Science

1. Problem solving: Graduates can analyze complex problems, design algorithms, and implement solutions using diverse programming languages

2. Tech Innovators: Graduates will showcase innovation in contributing to cutting-edge technologies.

Programme Educational Outcomes(PEO)-B.Sc Computer Science

1. Versatile Professionals:Graduates will have a holistic understanding of Computer Science, contributing effectively to interdisciplinary projects.

2. Lifelong Learning: Graduates will stay updated on emerging technologies through continuous learning.

3. Ethical Responsibility: Graduates will uphold ethical standards, contributing responsibly to society and technology.

BATCHLOR OF COMPUTER APPLICATION -COURSE OUTCOME

COURSE CODE AND NAME	COURSE OUTCOME
BCA1B01 – COMPUTER FUNDAMENTALS AND HTML	CO1 Remembering the fundamental concepts of Computer hardware and software CO2 Understanding the knowledge of different Number system, Digital codes and Boolean Algebra CO3 Applying the problem-solving aspect CO4 Demonstrate the algorithm and flowchart for the given problem. CO5 Creating a Webpage with CSS
BCA1C01-MATHEMATICAL FOUNDATION FOR COMPUTER APPLICATION	CO1: Learn the basic principles of linear algebra and vectors. CO2: Familiar with Determinant and Matrices.

	CO3: Formulate Limit, Continuity and Differentiability. CO4: Learn the basic principles of differential and integral Calculus CO5: Demonstrate a working knowledge Definite and Indefinite Integrals. CO6: Learn the mathematical modelling using ordinary and partial differential equations
BCA1C02- DISCRETE MATHEMATICS	CO1 To equip the students with basic principles of discrete mathematics CO2 To learn the mathematical logic, set theory & Boolean Algebra CO3 To understand the basic concept of graphs and trees.
SEMESTER II BCA2B02 – Problem Solving Using C	CO1 Understanding the basic principles of C Programming. CO2 Applying the decision making and looping concepts. CO3 Design and develop modular programming. CO4 Applying the usage of Arrays, strings, structures,union and files. CO5 Applying and Analyzing the effective utilization of pointers and dynamic memory allocation.
BCA2B03 - Programming Laboratory I: Lab Exam of 1st & 2nd Semester - HTML and Programming in C	CO1·Analyze a web page and identify its elements and attributes. · CO2 Create web pages using HTML5 and Cascading Style Sheets. CO3 Design and develop a webpage with Hyperlinks. CO4 Analyzing and Applying the problem solving skills and use the same for writing programs in C. CO5 Creating diversified programs using C language
BCA2C03-FINANCIAL AND MANAGEMENT ACCOUNTING	CO1 To get a general introduction on accounting and its general application. CO2 To get a general understanding on various tools for financial statement analysis. CO3 To get a general understanding on accounting procedures up to the preparation of various financial statements. CO4 To get a general understanding of the important tools for managerial decision making.

BCA2C04-OPERATIONS RESEARCH	CO1 To formulate a real-world problem as a mathematical model. CO2 To find solutions for the mathematical models using LPP, Assignment and Transportation methods CO3 Formulate and solve problems as networks and graphs. CO4 To use CPM and PERT techniques to plan, schedule and control the activities of a project.
SEMESTER III A11– Python Programming	CO1 Understanding the basic principles of Python programming language CO2 Applying the decision making and loop statements in Python,. CO3 Applying and creating GUI applications using Python CO4 Understanding and Applying the modular programming concepts using Python CO5 Understand List,Tuple,Dictionary concepts in Python.
SEMESTER III XXXXA12 Sensors and Transducers	CO1 Explain resistance, inductance and capacitance transducers. CO2 Understanding the concepts of temperature transducers. CO3 Understanding the concepts level transducers and pressure CO4 Understanding flow transducers, electromagnetic transducers, radiation sensors and sound transducers CO5 Applying and analyzing the problem-solving skills to troubleshoot issues related to sensors and transducers
BCA3B04 – Data Structures Using C	CO1. Understanding the fundamental data structures and with the manner in which these data structures can best be implemented; become accustomed to the description of algorithms in both functional and procedural styles CO2. Understanding and analysing the knowledge of complexity of basic operations like insert, delete, search on these data structures. CO3 Analysing the ability to choose a data structure to suitably model any data used in computer applications. CO4. Applying and creating programs using various

	data structures including hash tables, Binary and general search trees, graphs etc. CO5.Applying and understanding the applications of algorithms for sorting, pattern matching
BCA3C05- Computer Oriented Numerical & Statistical Methods	CO1 To compute solution of algebraic and transcendental equation by numerical methods like Bisection method and Newton Raphson method. CO2 To recognize elements and variables in statistics and summarize qualitative and quantitative data. CO3 To calculate the mean, median and mode for individual series. CO4 To outline the properties of correlation and compute Karl-Pearson's coefficient of correlation
BCA3C06 –Theory of Computation	CO1 To discuss key notions of computation, such as algorithm and decidability through problem solving. CO2 To explain the models of computation, including formal languages, grammars and automata, and their connections. CO3 To analyze and design finite automata, pushdown automata and Turing machines. CO4 To solve computational problems regarding their computability and complexity and prove the basic results of theory of computation.
SEMESTER IV XXXXA13– Data Communication and Optical Fibers	CO1 Understanding the structure of Data Communications System and its components. CO2 Understanding different network terminologies and transmission media CO3 Understanding and remembering the knowledge of the different multiplexing techniques ,Telephone system,Mobile System-GSM CO4 Understanding ans applying the functions of a Datalink layer and Switching CO5 Understanding the knowledge of Optical Fibre Cable and its working
XXXXA14 Microprocessors-Architecture	CO1 To understand and remembering the internals of

and Programming	Microprocessor CO2 Understanding the general architecture of microprocessor CO3 Applying the assembly language programs,both simple programs and interfacing programs CO4 Applying and Understanding how to interface peripheral devices with 8085 CO5 Understanding the architecture of 8086 microprocessor
BCA4B05 – Database Management System and RDBMS	CO1. Gain and remember the knowledge of database systems and database management system software CO2. Applying and creating the data model in applications using conceptual modeling tools such as ER Diagrams and design data base schemas based on the model. CO3.Applying, using SQL, solutions to a broad range of query and data update problems. CO4. Applying and understanding of normalization theory and apply such knowledge to the normalization of a database. CO5. Understanding the basics of transaction processing and concurrency control.
BCA4B06- Programming Laboratory II: Lab Exam of 3rd and 4th Semester - Data Structures and RDBMS	CO1 Applying the use of typical data definitions and manipulation commands CO2 Applying and evaluating the nested and join queries CO3 Create simple application using views, sequences and synonyms. CO4 Analyzing and applying the applications that require front-end tools CO5 Understanding the different data structures tools like searching ,sorting,Linked List etc
BCA4C08- Computer Graphics	CO1 To understand the basics of computer graphics, different graphics systems and applications of computer

	graphics. CO2 To learn various algorithms for scan conversion and filling of basic objects. CO3 To know the use of geometric transformations on graphics objects and their application in composite form. CO4 To learn different clipping methods and its transformation to graphics display device. CO5 To make students familiar with different color models and image manipulation using GIMP
BCA4C07-E-COMMERCE	CO1 Understand basics of electronic commerce framework CO2 Understand the various models of E-Commerce CO3 Understand the basics of networks and E-marketing CO4 Understanding the security, legal and ethical issues in E Commerce. CO5 Analyzing the e-payment systems and designing the payment system
SEMESTER V BCA5B07 Computer Organization and Architecture	CO1.To make students understand the basic structure, operation and characteristics of a digital computer. CO2.Understand and Applying the Computer Instruction and Interrupt Design CO3. Understand to know the different types of control unit and Addressing Modes CO4. Understanding and applying theMemory organization including cache memories and virtual memory CO5. To understand the I/O devices and standard I/O interfaces
BCA5B08 Java Programming	CO1 Understand the basic concepts of OOPS. Knowledge of the structure and model of the Java programming language, CO2.Understanding the Java programming language for various programming technologies CO3.Creating software in the Java programming language, CO4.Evaluate user requirements for software

	functionality required to decide whether the Java programming language can meet user requirements CO5 Creating the application Using GUI and JDBC
BCA5B09 Web Programming using PHP	CO1 To understand basics of the Internet and World Wide Web CO2 Applying basic skill to develop responsive web applications CO3 Remembering and understanding the knowledge of HTML and CSS CO4 To understand basic concept of client side scripting language -javascript CO5 To understand the server side scripting language -PHP CO6 Applying the integration of PHP and Postgresql
BCA5B10 Principles of Software Engineering	CO1 Ability to apply software engineering principles and techniques. CO2 Creating and evaluating efficient, reliable, robust and cost-effective software solutions CO3 Understanding with Unified Modeling Language CO4 Understanding and applying the basics of software testing and maintenance phase CO5 Creating a project with SE methodologies.
Open Courses (XXX5DXX) BCA5D01 Introduction to Computers and Office Automation	CO1 Understand different types of computers CO2 Applying documentation using Word processing software such as MS word and Open Office Writer CO3 Applying calculations using spreadsheet MS Excel and Open Office Writer CO4 Applying presentations using Open Office Impress/MS-Power Point): CO5 Creating practical skills of MS Office.
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