



Shri Pragya Mahavidyalaya

Post Graduate College of Science, Technology, Management, Arts & Commerce

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Program Outcome (PO's),

- **Program Specific Outcomes**

(PSO's) and Course

Outcome (CO's) for UG

Programs of Faculty of

Computer Science and

Applications

Department of BCA

Programme Outcomes : BCA

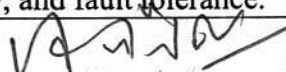
Department of BCA	After successful completion of three year degree program in BCA, student should be able to:
Programme Outcomes	<p>PO-1: List and describe key programming languages, including C, C++, Java and Python</p> <p>PO-2: Understand the principles of Object-Oriented Programming (OOP) and their application in software development.</p> <p>PO-3: Develop software applications using various programming languages and development environments.</p> <p>PO-4: Organize software requirements and design specifications.</p> <p>PO-5: Evaluate the effectiveness of different software development methodologies.</p> <p>PO-6: Design and develop software solutions for real-world problems.</p>
Programme Specific Outcomes	<p>PSO 1: Recall fundamental concepts of computer science, including algorithms, data structures, and programming languages.</p> <p>PSO 2: Comprehend the concepts of web technologies, including HTML, CSS, and JavaScript.</p> <p>PSO-3: Create user-friendly interfaces and user experiences for software applications.</p>


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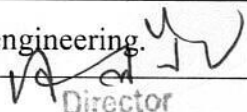
BCA COMPUTER FUNDAMENTALS

Course Outcomes

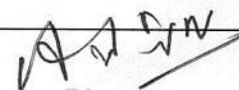
Paper No.	Paper Name
CC - I	Computer Fundamentals: Student should be able to:
CO-1	Recall the basic components of a computer system, such as CPU, memory, storage devices, input/output devices.
CO-2	Summarize the different types of computer networks (LAN, WAN, MAN) and their characteristics.
CO-3	Apply troubleshooting techniques to diagnose and resolve common hardware and software issues.
CO-4	Evaluate the performance characteristics of different types of storage devices (HDDs, SSDs) and their suitability for various applications.
CO-5	Judge the environmental impact of electronic waste (e-waste) and propose sustainable disposal practices.
CO-6	Create a multimedia presentation on emerging trends in computer technology.
CC - II	Data Structure: Student should be able to:
CO-1	Recall the basic data structures such as arrays, linked lists, stacks, queues, trees, and graphs.
CO-2	Describe the mechanisms of dynamic memory allocation and deallocation in data structures.
CO-3	Implement basic data structures (e.g., linked lists, stacks, queues) in a programming language of choice.
CO-4	Analyze the time and space complexities of algorithms involving different data structures.
CO-5	Assess the scalability and performance of data structures in handling large datasets and complex operations.
CO-6	Create algorithms that combine multiple data structures to solve complex computational problems.
CC-III	Cyber Security Technologies & Practices: Student should be able to:
CO-1	Memorize common cyber security threats and attack vectors, such as malware, phishing, and social engineering
CO-2	Summarize the concepts of authentication, authorization, and access control in cyber security.
CO-3	Implement security controls such as firewalls, antivirus software, and intrusion detection systems.
CO-4	Evaluate the effectiveness of security measures in mitigating specific types of cyber threats
CO-5	Evaluate the security risks associated with cloud computing and propose risk mitigation strategies.
CO-6	Design and implement secure network architecture for a new enterprise deployment, considering scalability, redundancy, and fault tolerance.


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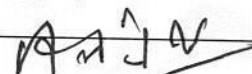
CC-IV	Programming in C: Student should be able to:
CO-1	Recall the basic syntax and semantics of the C programming language.
CO-2	Explain the concepts of variables, constants, and data types in C.
CO-3	Utilize arrays, pointers, and dynamic memory allocation to manipulate data effectively.
CO-4	Examine and debug C code to identify and fix logical errors and memory leaks.
CO-5	Evaluate the readability and maintainability of C code according to coding standards and best practices.
CO-6	Design and implement complex C programs to solve real-world problems, incorporating multiple functions and modules.
CC-V	Financial Accounting Software : Student should be able to:
CO-1	Recall and define fundamental accounting concepts, principles, and terms.
CO-2	Explain the double-entry system and its importance in maintaining accurate financial records.
CO-3	Apply accounting principles to journalize and post transactions accurately in Tally ERP 9.
CO-4	Analyze financial data in Tally ERP 9 to track expenses, incomes, and inventory levels.
CO-5	Evaluate the security measures and data management practices in Tally ERP 9.
CO-6	Design and implement a financial year-end process using Tally ERP 9, including data backup and restore procedures.
CC-VI	Multimedia Basics : Student should be able to:
CO-1	Recall fundamental concepts in multimedia, such as text, images, audio, video, and animations.
CO-2	Describe the basics of digital image editing, including resizing, cropping, and retouching.
CO-3	Create multimedia presentations or interactive projects using authoring tools (e.g., Adobe Flash, Microsoft PowerPoint).
CO-4	Analyze the impact of multimedia elements on user engagement and experience.
CO-5	Evaluate the quality and effectiveness of multimedia projects created by peers or professionals.
CO-6	Create interactive multimedia applications or websites using scripting languages (e.g., HTML, CSS, JavaScript).
Paper No.	Paper Name
CC-I	Software Engineering : Student should be able to:
CO-1	Recall the basic principles and concepts of software engineering.


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CO-2	Comprehend the principles of object-oriented design and software architecture.
CO-3	Apply software engineering principles to analyze and design software solutions for real-world problems.
CO-4	Analyze software architectures for scalability, maintainability, and performance.
CO-5	Evaluate the effectiveness of software development methodologies in different project contexts.
CO-6	Create software documentation including requirements specifications, design documents, and user manuals.
CC-II	Python Programming : Student should be able to:
CO-1	Recall the basic syntax and structure of the Python programming language.
CO-2	Grasp the principles of object-oriented programming (OOP) in Python, including classes, objects, inheritance, and polymorphism
CO-3	Apply Python programming skills to solve various computational problems and tasks.
CO-4	Analyze existing Python code to understand its functionality and structure.
CO-5	Evaluate the performance of Python code in terms of speed, memory usage, and scalability.
CO-6	Create Python applications and scripts from scratch to address specific requirements
CC-III	Database Management System : Student should be able to:
CO-1	Recall the fundamental concepts of databases, such as tables, rows, columns, and keys.
CO-2	Comprehend the architecture and components of a database management system.
CO-3	Utilize SQL to create and manipulate databases, tables, and relationships.
CO-4	Analyze SQL queries and their execution plans to optimize performance
CO-5	Critically evaluate database management system features and vendors for specific business needs
CO-6	Create normalized database schemas from given business requirements.
CC-IV	Java Programming : Student should be able to:
CO-1	Recall the basic syntax and structure of the Java programming language.
CO-2	Understand control flow structures such as loops, conditionals, and branching in Java.
CO-3	Apply Java programming skills to solve various computational problems and tasks.


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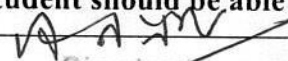
CO-4	Break down complex problems into smaller, manageable tasks and design Java solutions for them
CO-5	Evaluate the performance of Java code in terms of speed, memory usage, and scalability
CO-6	Design and implement Java projects that demonstrate proficiency in advanced concepts like multithreading, networking, or database connectivity.
CC-V	C++ Programming For Object Oriented Systems: Student should be able to:
CO-1	Recall the syntax and basic features of C++ programming language.
CO-2	Understand the principles of object-oriented programming (OOP) and how they are implemented in C++
CO-3	Utilize C++ features such as classes, objects, inheritance, and polymorphism to model and represent complex systems.
CO-4	Analyze existing C++ code to understand its structure and functionality
CO-5	Evaluate the design and implementation of C++ classes and objects for adherence to object-oriented principles.
CO-6	Develop C++ programs from scratch that demonstrate proficiency in OOP concepts and techniques.
CC-VI	Computer Graphics : Student should be able to:
CO-1	Recall the basic principles and concepts of computer graphics
CO-2	Understand the mathematical principles behind computer graphics, such as vectors, matrices, and transformations
CO-3	Develop interactive graphics applications, such as games or simulations.
CO-4	Evaluate the visual quality of rendered images and animations.
CO-5	Assess the performance and scalability of graphics applications
CO-6	Create visually appealing 2D and 3D graphics using modeling and rendering techniques
Paper No.	Paper Name
CC - I	Relational Database Management System : Student should be able to:
CO-1	Define key concepts in RDBMS such as tables, rows, columns, keys, and relationships
CO-2	Explain the principles of relational databases and the advantages of using RDBMS over other data storage methods.
CO-3	Design and implement relational database schemas, including defining tables, relationships, and constraints.
CO-4	Analyze complex database requirements and design appropriate database schemas to meet them.



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CO-5	Critique existing database designs and suggest improvements for normalization, efficiency, and maintainability
CO-6	Develop database applications with a focus on scalability, security, and performance.
CC - II	.Net Programming with C#: Student should be able to:
CO-1	Recall basic C# syntax and language constructs.
CO-2	Explain the principles of Object-Oriented Programming (OOP) and how they apply in C#.
CO-3	Write C# code to solve basic programming problems.
CO-4	Compare and contrast different approaches to solve a given problem in C#
CO-5	Assess the efficiency and effectiveness of algorithms and data structures used in C# programs.
CO-6	Design and develop complex applications using C# and .NET framework.
CC - III	Internet Tools and Website Development : Student should be able to:
CO-1	Recall basic HTML tags and their usage and list commonly used CSS properties and their effects on web page styling.
CO-2	Interpret the relationship between HTML, CSS, and JavaScript in web development .
CO-3	Build a static website using HTML and CSS.
CO-4	Analyze and troubleshoot common issues in HTML, CSS, and JavaScript code.
CO-5	Critically evaluate the user experience of a website.
CO-6	Create responsive and mobile-friendly websites using CSS frameworks and media queries.
CC - IV	Computer Network & Mobile Computing: Student should be able to:
CO-1	List and describe different types of network topologies.
CO-2	Explain the difference between LAN, WAN, and MAN.
CO-3	Configure IP addresses and subnet masks on network devices.
CO-4	Analyze network traffic using packet sniffers and network analyzers.
CO-5	Evaluate the reliability and scalability of network infrastructure designs.
CO-6	Design and implement a wide area network (WAN) connecting multiple locations.
CC - V	Open Source Technology & Operating System: Student should be able to:


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CO-1	Identify key components of Linux-based operating systems.
CO-2	Describe the architecture of Linux-based operating systems.
CO-3	Configure network settings and services on a Linux system.
CO-4	Analyze system logs to troubleshoot common issues in a Linux environment.
CO-5	Evaluate the reliability and stability of open source operating systems.
CO-6	Design and implement a custom Linux distribution tailored for a specific purpose.
CC - VI	Sales Force : Student should be able to:
CO-1	Recall the key features and functionalities of Sales Force CRM.
CO-2	Understand the process of lead generation and conversion in Sales Force.
CO-3	Create and manage leads, accounts, contacts, and opportunities in Sales Force.
CO-4	Analyze the effectiveness of marketing campaigns using Sales Force data.
CO-5	Evaluate the ROI of using Salesforce for sales and marketing activities.
CO-6	Develop custom applications on the Sales Force platform using Apex and Visual force.



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