COURSE OUTCOMES

(B.C.A)

BACHELOR OF COMPUTER APPLICATION

SEMESTER IV

Course Outcomess (COs)		
B.C.A. (Part II) Semester - IV		
BCA -64 T -211: PHP Programming		
The Learners will be able to:		
CO 1	Demonstrate knowledge of Core PHP fundamentals, syntax, and server-side scripting concepts.	K,U
CO 2	Explain the working of PHP scripts on a web server and their interaction with client-side technologies.	U,A
CO 3	Develop dynamic and interactive web pages using PHP to enhance user experience.	A,S
CO 4	Implement PHP scripts to connect, retrieve, and manipulate data from MySQL databases.	A,S
CO 5	Design and integrate complete PHP-based web applications demonstrating modularity, functionality, and security.	**S,E**
CO 6	Exhibit professional ethics, problem-solving attitude, and teamwork while developing PHP projects.	A,E

Course Outcomess (COs)		
B.C.A. (Part II) Semester - IV		
BCA -64 P -212: PHP Lab		
The Learners will be able to:		
CO 1	Understand the basic syntax, variables, operators, and control structures used in Core PHP programming	K,U
CO 2	Apply server-side scripting techniques to create and execute PHP scripts on a local or remote web server.	A,S
CO 3	Design and develop dynamic and interactive web pages using PHP for real-time user interaction	A,S
CO 4	Integrate PHP with MySQL databases to perform data storage, retrieval, and manipulation operations	A,S
CO 5	Develop mini web-based projects demonstrating form handling, session management, and error handling using PHP	**S,E**
CO 6	Demonstrate teamwork, creativity, and professional ethics while developing and presenting PHP-based web solutions.	A,E

Course Outcomes (COs)		
B.C.A. (Part II) Semester - IV		
BCA-64T-213: Object Oriented Concepts Using Java Programming		
The Learners will be able to:		
CO1	Understand the features of Java and the architecture of JVM	K
CO2	Write, compile, and execute Java programs that may include basic data types and control flow constructs and how type casting is done	P
CO3	Identify classes, objects, members of a class and relationships among them needed for a specific problem and demonstrate the concepts of polymorphism and inheritance	S
CO4	Able to demonstrate programs based on interfaces and threads and explain the benefits of JAVA's Exceptional handling mechanism compared to other Programming Language	U
CO5	Write, compile, execute Java programs that include GUIs and event driven programming and also programs based on files	K

Course Outcomes (COs)		
B.C.A. (Part II) Semester - IV		
BCA-64P-214: Java Lab		
The Learners will be able to:		
CO1	Understand the features of Java and the architecture of JVM	K,U
CO2	Write, compile, and execute Java programs with strings	P,S
CO3	Identify classes, objects, members of a class and relationships among them needed for a specific problem	K,A
CO4	Demonstrate programs based on interfaces and threads and explain the benefits of JAVA's Exceptional handling mechanism	P,U,E
CO5	Write, compile, execute Java programs that include GUIs and event-driven programming and also programs based on files	P,S

Course Outcomes (COs)		
B.C.A. (Part II) Semester - IV		
BCA -64 T -215 Mathematics & Statistics		
The Learners will be able to:		
CO 1	Understand the fundamental concepts of sets and perform various set operations including union, intersection, and complements using Venn diagrams.	**U**
CO 2	Demonstrate knowledge of relations and functions, including types of relations and the concept of one-to-one, onto, bijective, inverse, and composite functions.	**A**
CO 3	Apply the principles of logic including propositions, connectives, truth tables, and De Morgan's laws to construct valid mathematical arguments and proofs.	**S**
CO 4	Perform matrix operations such as addition, subtraction, multiplication (noting non-commutativity), scalar multiplication, and transpose, and understand different types of matrices.	**P**
CO 5	Compute the determinant of square matrices and use properties of determinants, minors, and cofactors for matrix simplification.	**P**
CO 6	Solve systems of linear equations using Cramer's Rule and apply concepts of adjoint and inverse of matrices in practical problem-solving.	**A**
CO 7	Collect, classify, and present data effectively using frequency distributions and appropriate graphical representations.	**U**
CO 8	Calculate and interpret measures of central tendency (mean, median, mode) and dispersion (mean deviation, variance) to describe datasets.	**A**
CO 9	Analyze relationships between variables using correlation analysis techniques such as Karl Pearson's and Rank correlation coefficients.	**A**
CO 10	Understand and apply regression analysis to find regression lines, interpret their properties, and differentiate between correlation and regression.	**S**

Course Outcomes (COs)		
B.C.A. (Part II) Semester - IV		
SEC-63P-203 – Computer Applications In Fashion Design		
The Learners will be able to:		
CO 1	Demonstrate knowledge of CorelDraw and Adobe Photoshop tools to build a strong foundation in digital design software.	K
CO 2	Understand CAD techniques for developing fashion designs that incorporate color, texture, silhouette, and detailed garment features.	U
CO 3	Apply CAD skills to create and modify fashion designs using digital tools for enhanced creativity and precision.	A
CO 4	Solve design challenges by effectively integrating accessories and embellishments within CAD-based fashion projects.	P
CO 5	Synthesize visual elements to develop appealing mood boards that reflect color stories, fabric textures, and thematic concepts.	**S**
CO 6	Evaluate and present theme-based fashion concepts using CAD to demonstrate innovation, aesthetics, and professional design competence.	E

Course Outcomes (COs)		
B.C.A. (Part II) Semester - IV		
B CA- VAC-63T-209 Cyber Law and Ethics		
The Learners will be able to:		
CO1	Explain the evolution of cyber law and identify key concepts such as cyber jurisdiction, cyber space, and cyber ethics.	K,U
CO2	Interpret the provisions, amendments, and limitations of the Information Technology Act, including digital signatures, cybercrime, and penalties.	U
CO3	Analyze ethical challenges in cyber technology and evaluate the importance of cyber ethics in various professional and societal contexts.	A,E
CO4	Assess issues related to intellectual property, such as copyright, patents, plagiarism, reverse engineering, and cybersquatting.	E
CO5	Apply cybersecurity principles and ethical frameworks to case studies involving real-world legal and technical issues.	A
CO6	Evaluate the impact of emerging technologies like AI, blockchain, and green computing on ethical decision-making and legal frameworks.	E
CO7	Create recommendations for ICT professionals on ethical practices, quality software development, whistle-blowing, and global IT workforce issues.	S

COURSE OUTCOMES

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SEMESTER V

Course Outcomes (COs)		
B.C.A. (Part III) Semester V		
B CA-75T-301: Artificial Intelligence & Machine Learning		
The Learners will be able to:		
CO1	Understand the fundamental concepts and techniques of artificial intelligence.	K
CO2	Apply AI algorithms and methodologies to solve real-world problems.	P
CO3	Design and develop AI systems using appropriate tools and frameworks.	S
CO4	Evaluate and optimize AI models for performance and accuracy.	U
CO5	Differentiate between supervised and unsupervised learning tasks.	K
CO6	Differentiate between linear and non-linear classifiers. 3	U
CO7	Describe theoretical basis of SVM	K

ourse Outcomes (COs)		
B.C.A. (Part III) Semester V		
BCA-75P-302: Machine Learning Lab		
The Learners will be able to:		
CO1	Demonstrate Python and essential libraries for ML tasks	K
CO2	Understand data preprocessing techniques	U
CO3	Apply supervised learning algorithms and evaluate performance	P
CO4	Implement unsupervised learning and visualize clusters	S
CO5	Interpret results responsibly with ethical considerations	E

Course Outcomess (COs)		
B.C.A. (Part III) Semester V		
BCA-75T-303: Python Programming		
The Learners will be able to:		
CO1	Understand the basics of programming language.	K,U
CO2	Develop, document, and debug modular Python programs.	U,P,A,S
CO3	Apply suitable programming constructs and built-in data structures to solve a problem.	U,P,A,S
CO4	Use and apply various data objects in Python.	K,U,P,A,S
CO5	Use classes and objects in application programs and handle files.	K,U,P,A,S

Course Outcomess (COs)		
B.C.A. (Part III) Semester V		
BCA-75P-304: Python Lab		
The Learners will be able to:		
CO1	Demonstrate Python basics: variables, operators, conditionals, loops, functions.	K,U
CO2	Develop programs using Python data structures and strings.	U,P,A,S
CO3	Perform file handling: read, write, and analyze data.	U,P,A,S
CO4	Apply NumPy and Pandas for data manipulation and visualization.	K,U,P,A,S
CO5	Build applications with math, date-time, and database operations.	K,U,P,A,S
CO6	Debug, analyze outputs, and optimize program performance.	U,P,A,S,E

Course Outcomess (COs)		
B.C.A. (Part III) Semester V		
BCA-75T-305: Data Communication and Computer Networks		
The Learners will be able to:		
CO1	Understand the fundamentals of computer networks, including topologies, models, and architectures.	U
CO2	Apply knowledge of data communication fundamentals to differentiate between signal types, modulation techniques, and transmission media.	P
CO3	Analyze the functions of the data link and network layers, including framing, error control, and routing.	A
CO4	Evaluate transport and application layer protocols such as TCP, UDP, HTTP, and DNS for efficient data communication.	E
CO5	Compare circuit switching and packet switching technologies and their relevance in modern networks.	A, E
CO 6	Design secure network models incorporating wireless technologies, encryption, and firewall mechanisms.	S

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SEMESTER VI

Course Outcomes (COs)		
B.C.A (Part III) Semester VI		
BCA-76T-311 .NET Framework with C#		
The learners will be able to		
CO 1	To learn fundamentals of. net framework	K
CO 2	To enrich knowledge about Windows Forms, Controls and ASP.NET based applications.	U
CO 3	To acquire skills to create web-based applications and Reports using.net technologies.	P/A
CO 4	To enrich knowledge about ADO.NET Controls and Database based applications.	S/E

Course Outcomes (COs)		
B.C.A (Part III) Semester VI		
BCA-76P-312 .NET with C# Lab		
The learners will be able to		
CO 1	Develop simple Windows applications and handle arrays, data structures, and function overloading	P
CO 2	Design and implement GUI controls, forms, dialog boxes, and event handling	P
CO 3	Work with Web Controls, User Controls, and create dynamic web pages	A
CO 4	Apply data binding, validation controls, session management, and exception handling in applications	A/S
CO 5	Implement Web Services, WCF, and industry-relevant cloud/real-world applications	S

Course Outcomes (COs)		
B.C.A (Part III) Semester VI		
BCA-76T-313 Introduction to Data Science		
The learners will be able to		
CO 1	Understand the fundamental concepts and principles of data science.	K
CO 2	Apply data manipulation techniques using appropriate tools and libraries.	P
CO 3	Analyse and visualize data to extract insights and make data-driven decisions.	E
CO 4	Apply statistical methods and machine learning algorithms to analyse data.	A/E
CO 5	Communicate data findings effectively through data visualization and storytelling.	S

Course Outcomes (COs)		
B.C.A (Part III) Semester VI		
BCA-76P-314 Data Science Lab		
The learners will be able to		
CO 1	Understand and practice fundamentals of R programming, data types, operators, control structures, arrays, strings, vectors, matrices, factors, and data frames	P
CO 2	Manipulate and manage data using R/Python packages, data reshaping, file handling, and data management techniques	P/A
CO 3	Perform data visualization using R graphics, GGplot2, and other visualization libraries	A
CO 4	Apply statistical concepts, hypothesis testing, data sampling, confidence intervals, and significance tests	A/E
CO 5	Implement regression and machine learning algorithms like Linear Regression, Logistic Regression, K-NN, and K-means for data analysis	S

Course Outcomes (COs)		
B.C.A (Part III) Semester VI		
BCA-76T-315 Cloud Computing		
The learners will be able to		
CO 1	Understand the key dimensions of the challenges and benefits of Cloud Computing.	U
CO 2	Describe the principles of Parallel and Distributed Computing and evolution of cloud computing from existing technologies	K
CO 3	Implement different types of Virtualization technologies and Service Oriented Architecture systems.	P
CO 4	Choose among various cloud technologies for implementing applications.	A
CO 5	Install and use current cloud technologies.	S

Course Outcomes (COs)		
B.C.A (Part III) Semester VI		
SEC-75T-306- E-Commerce Technologies		
The learners will be able to		
CO 1	Analyze the impact of E-commerce on business models and strategy.	E
CO 2	Describe the major types of E-commerce.	K
CO 3	Explain the process that should be followed in building an E-commerce presence.	U
CO 4	Identify the key security threats in the E-commerce environment.	S
CO 5	Describe how procurement and supply chains relate to B2B E-commerce.	U