B.L.D.E.ASSOCIATION'S
SB ARTS AND K.C.P. SCIENCE COLLEGE, VIJAYAPUR
RE-ACCREDITED AT THE 'B^{++}' LEVEL
B.C.A Programme

PROGRAM OUTCOMES

POs	DESCRIPTIONS
PO1:	**Disciplinary Knowledge:** Acquiring knowledge on basics of Computer Science and ability to apply to design principles in the development of solutions for problems of varying complexity.
PO2:	**Problem Solving:** Improved reasoning with strong mathematical ability to indentify ,formulate and analyse problems related to computer science and exhibiting a sound knowledge on data structure and algorithms.
PO3:	**Design and Development of Solutions:** Ability to design and development of algorithmic solutions to real world problems and acquiring a minimum knowledge on statistics and optimization problems. Establishing excellent skills in applying various design strategies for solving complex problems.
PO4:	**Programming a Computer:** Exhibiting strong skills required to program a computer for various issues and problems of day-to-day applications with thorough knowledge on programming languages of various levels.
PO5:	**Application System Knowledge:** Possessing a sound knowledge on computer application software and ability to design and develop app for applicative problems.
PO6:	**Modern Tool Usage:** Identify, select and use a modern scientific and IT tool or techniques for modeling ,prediction, data analysis and solving problems in the area of Computer Science and making them mobile based application software.
PO7:	**Communication:** Must have a reasonably good communication knowledge both in oral and writing.
PO8:	**Project Management:** Practicing of existing projects and becoming independent to launch own project by identifying a gap in solutions.
PO9:	**Ethics on Profession, Environment and Society:** Exhibiting professional ethics to maintain the integrality in working environment and also have concern on societal impacts due to computer-based solutions for problems.
PO10:	**Lifelong Learning:** Should become an independent learner so, learn to learn ability.
PO11:	**Motivation to take up Higher Studies:** Inspiration to continue educations towards advanced studies on Computer Science

By the end of the program the students will be able to :Outcome Based Education.

1. Apply standard Software Engineering practices and strategies in real-time software project development.
2. Design and develop computer programs /computer-based systems in the areas related to AI, algorithms, networking, web design, cloud computing , IOT and data analytics.
3. Acquaint with the contemporary trends in industrial/research settings and thereby innovative novel solutions to existing problems.
4. The ability to apply the knowledge and understanding noted above to the analysis of a given information handling problem.
5. Knowledge of Programming through Practical's.
6. The ability to work independently on a substantial software project and as an effective team member.

Course outcomes

ourse	Course Code/Course Title	COURSE OUTCOMES	DESCREPTIONS
B.C.A I SEM	21BCA1C2L/ Fundamentals of Computers		At the end of the course the student should be able to
		CO1	Create an awareness of computers its classification and anatomy.
		CO2	Understand Number System, computer languages and the steps for problem solving.
		CO3	Understand the fundamentals of operating system and basic commands.
		CO4	Understand the basic concepts of DBMS and Internet.
	21BCA1C1L/ Programming in C	CO1	Read, understand and trace the execution of programs written in C language.
		CO2	Apply programming control structures for a given problem to create C code.
		CO3	Understand derived data types and develop C code using arrays/strings.
		CO4	Understand user defined functions and data types to develop C code.
	21BCA1C3LMF /Mathematical Foundation	CO1	Study and solve problems related to connectives, predicates and quantifiers under different situations.
		CO2	Develop basic knowledge of matrices and to solve equations using Cramer's rule.
		CO3	Know the concept of Eigen value.
		CO4	Develop the knowledge about derivatives and know various applications of differentiation.
		CO5	Understand the basic concepts of Mathematical reasoning, set.
	21BCA1C3LAC /Accountancy	CO1	Study and understand Accounting, Systems of Book. Branches of accounting advantage and limitations
		CO2	Know the concept of accounting, financial accounting process and journalization.
		CO3	Maintenance different account book and reconciliations.
		CO4	Preparations of different bills and trial balance.
B.C.A II SEM	21BCA2C4L/ Data structures using C	CO1	Understand the classification of data structures and dynamic memory allocation .
		CO2	Understand the difference between iteration and recursion and apply recursive definition for problem solving.
		CO3	Understand and evaluate the applications of stacks and queues .
		CO4	Understand and evaluate the applications of linked list and tree.

	21BCA2C5L/ Object Oriented Programming with JAVA	CO1	**Understand** the features of java and he architecture of JVM..
		CO2	**Write, compile and execute** java programs that may include basic data types and control flow constructs and how type casting is done.
		CO3	**Identify** classes, objects , members of a class and relationships the among them needed for a specific problem and demonstrate the concepts of polymorphism and inheritance.
		CO4	**Demonstrate** programs based on interfaces and threads and explain the benefits of JAVA's exceptional handling mechanism compared to other Programming language.
		CO5	**Write, compile and execute** java programs that include GUIs and event driven programming and also programs based on files.
	21BCA2C6L/ Discrete Mathematics	CO1	**Understand** the basic concepts of Mathematical reasoning, set and functions.
		CO2	**Understand** various counting techniques and principle of inclusion and executions .
		CO3	Equivalence relations.
		CO4	**Apply** the concepts of generating functions to solve the recurrence relations.
		CO5	**Familiarize** the fundamental concept of graph theory and shortest path algorithm.
B.C.A III SEM	21BCA3C7L/ Database management System	CO1	**Explain** the various database concepts and the need for database systems.
		CO2	**Identify** and define database objects, enforce integrity constraints on a database using DBMS.
		CO3	**Demonstrate** a Data model and Schemas in RDBMS.
		CO4	**Convert** an ER Diagram to a database schema and deduce it to the desired normal form.
		CO5	**Formulate** queries in Relation algebra, Structures Query language(SQL) for database manipulation.
		CO6	**Explain** the transaction processing and concurrency control techniques.
	21BCA3C8L/C# and Dot Net Framework	CO1	**Describe** Object Oriented Programming concepts like Inheritance and Polymorphism in C# programming language.
		CO2	**Interpret** and Develop Interfaces for real-time applications.
		CO3	**Build** custom collections and generics in C#.

	21BCA3C9L/ Computer Communication and Networks	CO1	**Explain** the transmission technique of digital data between two or more computers and a computer network that allows computers to exchange data.
		CO2	**Apply** the basics of data communication and various types of computer networks in real world applications.
		CO3	**Compare** the different layers of protocols.
		CO4	**Compare** the key networking protocols and their hierarchical relationship in the conceptual model like TCP/IP and OSI.
B.C.A IV SEM	21BCA4C10L/ Python Programming	CO1	**Explain** the basic concepts of Python Programming.
		CO2	**Demonstrate** proficiency in the handling of loops and creation of functions.
		CO3	**Identify** the methods to create and manipulate lists, tuples and dictionaries.
		CO4	**Discover** the commonly used operations involving file handling.
		CO5	**Interpret** the concepts of Object-Oriented Programming as used in Python.
		CO6	**Develop** the emerging applications of relevant fields using Python.
	21BCA4C11L/ Computer Multimedia and Animation	CO1	**Write** a well-designed, interactive Web site with respect to current standards and practices.
		CO2	**Demonstrate** in-depth knowledge of an industry-standard multimedia development tool and its associated scripting language.
		CO3	**Determine** the appropriate use of interactive versus standalone Web applications.
	21BCA4C12L/ Operating System Concepts	CO1	**Explain** the fundamentals of the operating system.
		CO2	**Comprehend** multithreaded programming, process management, process synchronization, memory management and storage management.
		CO3	**Compare** the performance of Scheduling Algorithms.
		CO4	**Identify** the features of I/O and File handling methods.
B.C.A V Sem	BCADSC5.1/ Advanced Java	CO1	**Event Handling:** event source, classes ,interface, examples and types of classes.
		CO2	**Introduction:** swing, JFC and its various methods
		CO3	**Architecture of JDBC:** Introduction, types of drivers, events and data base operations.
		CO4	**Advance Java:** Servlet, developments, interactions, cookies, sessions and objects
		CO5	**Basic of Networking in java:** TCP/IP, Client-Server, Socket, URL, its connection, HTTP connection, Datagrams, EJB
	BCADSC5.2/ Data Warehousing and Mining	CO1	**Introduction:** Data warehouse, definition, architecture, OLAP, OLTP its differences and operations
		CO2	**Knowledge:** KDD, mining techniques, applications, , objects and its types ,statistical descriptions
		CO3	**Methods:** Data mining method frequent pattern analysis, evaluation and various pattern methods
		CO4	**Techniques:** Definition of classification and clustering, various algorithms and methods.
		CO5	**Experimental tool: Introduction of WEKA tools, dat**

	BCADSC5.3/ Network Security	CO1	**Introduction:** Basics cyber attacks, techniques, principles, background and basics of Cryptography.
		CO2	**Identify:** public Key Cryptography, ,performance, properties, applications, introduction of Diffie-Hellman Key, and other applications
		CO3	**Key Management:** Digital Certificate, encryption, Authentication, Biometrics. Network-layer Virtual private network and introduction of SSL.
		CO4	**Knowledge:** IEE 802.11 Wireless LAN Security ,background, authentication, practical issues ,prevention/Detection and its types.
		CO5	**Methods:** IT acts and Objectives.
	BCADSE5.4/.Net using C#	CO1	**Language fundamentals:** Introduction of C#, .NET platform, program, environment class, console class, data types, defining class, creating object.OOP's concepts.
		CO2	**More on Class and Objects:** Understanding of object lifetime classes, objects, bugs, methods and exceptions ,implementation of exceptions, it's methods, types
		CO3	**Implementation:** interfaces, constraints its types ,collections, benefits,classes,.NET delegate type, system and examples in delegates and events.
		CO4	**Application development:** GUI Using Windows Forms and Database Programming.
		CO5	**System level Skils:** Understanding of .NET Assemblers and file handling.
	BCADSE5.5/PHP	CO1	**Introduction:** basics of PHP like creating script, variables, operators, data types and constraints
		CO2	**Knowledge of programming flow:** Simple and complex conditional statements, loops ,working with strings , dates and times.
		CO3	**Ability to learn more methods :** arrays, processing array with loop and iterations, forms and functions.
		CO4	**Enhancement of skills:** Using functions and class like creating classes, advanced OOP concepts ,file handling methods and types of file handling methods.
		CO5	**Back-end knowledge:** Working with database and SQL ,DDL and DML statement manipulation methods
	BCADSE5.6/C# Lab	CO1	**Implementation of Programs:** developments of simple programs on environment class and Operating System
		CO2	**OOP's Concept:** Programs on inheritance, polymorphism, overloading
		CO3	**Application development:** Programs to develop at application level using GUI controls.
	BCADSE5.7/PHP Lab	CO1	**Basic approach of Programs:** Simple programs on Basics of PHP
		CO2	**Enhancements of Programming Skills:** demonstrating programs using arrays , strings and functions ,
		CO3	**OOP's Concept:** Programs on constructor, destructor and exceptions.
		CO4	**Application development:** Implementation of programs using GUI.

	BCADSE5.8/Advanced Java Lab	CO1	**Event handling Methods:** development of programs on keyboard and mouse events.
		CO2	**GUI Controls:** Programs to develop suing GUI controls
		CO3	**Application development:** Programs to develop at application level using GUI controls.
SEC	BCADSEC5.9/personality Development	CO1	**Introduction:** Meaning ,process, development and importance of personality, Psychological theory, analytic approach and development .
		CO2	**Determination of personality:** Intellectual, emotional, social, educational and personality.
		CO3	Personality: self-Concept, Process of perception, attitude and cognition and impact learning.
B.C.A VI Sem	BCADSC6.1/ Cyber Security	CO1	**Introduction:** Cyber crime, definition, classification and Perspective.
		CO2	**Concepts:** Cyber offenses. attacks, Botnets, frauds, Security challenges. Authentication, services.
		CO3	**Tools and methods:** Proxy servers, Anonymizers, Dos , DDos ,SQL injection, cyber crimes and security, legal Perspectives m Indian Context and Act.
		CO4	**Understanding:** Computer Forensics, Science, Need, Networking, approach. steganography, security/privacy, Threats and auditing.
		CO5	**Background:** Mathematical background like, divisor, Algebraic, Elementary, Ciphers, DFS Construction.
	BCADSC6.2/ Artificial Intelligence	CO1	**Introduction:** AI problem, assumption, technique, Defining problem with examples, reduction, satisfaction and analysis.
		CO2	**Knowledge Representation:** Mapping, issues, framing, relationships, computable functions, predicates, rules and logical programming.
		CO3	**Study of :** Methods and Theorems and Theory of Fuzzy logic.
		CO4	**Overview:** Conceptual dependency, scripts, CYC, game playing, adding alph-beta cutoffs, Refinements and iterative deepening.
		CO5	**Natural Language Processing:** Semantic, Analysis, Pragmatic processing, Learning, talking, advice ,problem solving, learning from examples, Analogy, Discovery and Genetic learning.
	BCADSC6.3/ Software Testing	CO1	**Introduction:** SDLC, Phases of software project, quality, Assurance, Quality control, verification, validation, testing and its types.
		CO2	**Techniques:** various types of techniques, System and Acceptance, functional and Non-Functional Testing.
		CO3	**Performance:** Factors, Methods, types, approach, Accessibility.
		CO4	**Technical I Issues:** Perception, Comparisons, career Paths for testing
		CO5	**Planning management:** Test approach, activity break down and risk management
		CO6	**Communication:** Identifying responsibilities and choosing appropriate tools

	BCADSE6.4/Cloud Computing	CO1	Introduction: cloud computing, benefits limitations and services
		CO2	Technology: security, platform, API, standards and infrastructure
		CO3	Techniques: cloud as software, cloud as service, mobile device integration
		CO4	Application development: Various providers, thin clients, virtualization
		CO5	Migration to cloud: Cloud services for individuals, the road ahead and Linux cloud interfaces
	BCADSE6.5/Image Processing	CO1	Introduction: Motivation, image representation, Analysis, digitization and image properties
		CO2	Techniques: Contrast, Normalization, Smoothing, Averaging, Sharpening and Filtering
		CO3	Techniques: Thresholding, Edge based - and Region based - segmentation, active contour models
		CO4	Methods: image transformation, compression methods - Predictive, Vector quantization, Hierarchical and progressive, Coding
		CO5	Representation: Knowledge Representation, Semantic and Syntactic, pattern recognition, neural Nets
	BCADSE6.6/Software Testing Lab	CO1	Tools: test web pages
		CO2	Constructs and Black box Testing: loops, conditions and functional/performance testing
		CO3	White box testing: code coverage, test cases
		CO4	Assessing files: coding with worksheet
	BCADSE6.7/Project Work	CO1	Introduction: analysis, design of project requirements
		CO2	Coding: Implementation and evaluation of project
		CO3	Skill enhancement: communication, and modeling the description
SEC	BCASEC6.8/ Communication Skills	CO1	Communication and its importance: Process of Communication, written and oral communication, process of listening body language or non verbal communication, the art of public speaking
		CO2	Leadership as a process: Working in a team, management of conflict, interpersonal and intrapersonal intergroup, Profiles of great personalities
		CO3	Career planning : role of career planning in personality development, personal interview and group discussion

Sem – I

Code/Subject: 21BCA1C2L/Fundamentals of Computers

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	2	2	-	2	-	3	3
CO2:	3	3	3	3	2	1	-	2	-	3	3
CO3:	3	3	3	3	2	2	-	2	-	3	3
CO4:	3	3	3	3	3	3	-	3	-	3	3

Sem – I

Code/Subject: 21BCA1C1L/ Programming in C

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	2	2	-	3	-	3	3
CO2:	3	3	3	3	2	2	-	3	-	3	3
CO3:	3	3	3	3	2	2	-	3	-	3	3
CO4:	3	3	3	3	3	3	-	3	-	3	3

Sem – I

Code/Subject: 21BCA1C3LMF/Mathematical Foundation

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	-	2	2	2	-	2	-	3	3
CO2:	3	3	-	2	2	2	-	2	-	3	3
CO3:	3	3	-	2	2	2	-	2	2	3	3
CO4:	3	3	-	2	2	3	-	3	-	3	3
CO5:	3	3	-	2	2	3	-	3	-	3	3

Sem – I

Code/Subject: 21BCA1C3LAC/Accountancy

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	-	2	2	2	-	2	-	3	3
CO2:	3	3	-	2	2	2	-	2	-	3	3
CO3:	3	3	-	2	2	2	-	2	2	3	3
CO4:	3	3	-	2	2	3	-	3	-	3	3
CO5:	3	3	-	2	2	3	-	3	-	3	3

Sem – II Code/Subject: 21BCA2C4L/ Data structures using C

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	3	-	3	-	3	3
CO2:	3	3	3	3	3	3	-	3	-	3	3
CO3:	3	3	3	3	3	3	-	3	-	3	3
CO4:	3	3	3	3	3	3	-	3	-	3	3

Sem – II Code/Subject: 21BCA2C5L/ Object Oriented Programming with JAVA

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	3	-	3	-	3	3
CO2:	3	3	3	3	3	3	-	3	-	3	3
CO3:	3	3	3	3	3	3	-	3	-	3	3
CO4:	3	3	3	3	3	3	-	3	-	3	3
CO5:	3	3	3	3	3	3	-	3	-	3	3

Sem – II Code/Subject: 21BCA2C6L/ Discrete Mathematics

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	-	2	2	2	-	2	-	3	3
CO2:	3	3	-	2	2	2	-	2	-	3	3
CO3:	3	3	-	2	2	2	-	2	2	3	3
CO4:	3	3	-	2	2	3	-	3	1	3	3
CO5:	3	3	-	2	2	3	-	3	1	3	3

Sem – III Code/Subject: 21BCA3C7L/ Database management System

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	3	-	3	-	3	3
CO2:	3	3	3	3	3	3	-	3	-	3	3
CO3:	3	3	3	3	3	3	-	3	-	3	3
CO4:	3	3	3	3	3	3	-	3	-	3	3
CO5:	3	3	3	3	3	3	-	3	-	3	3
CO6:	3	3	3	3	3	3	-	3	-	3	3

Sem – III Code/Subject: 21BCA3C8L/C# and Dot Net Framework

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	1	-	3	-	3	3
CO2:	3	3	3	3	3	1	-	3	-	3	3
CO3:	3	3	3	3	3	2	-	3	-	3	3

Sem – III Code/Subject: 21BCA3C9L/ Computer Communication and Networks

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	2	3	1	2	3	-	-	-	3	3
CO2:	3	2	3	1	2	3	-	-	-	3	3
CO3:	3	2	3	1	2	3	-	-	-	3	3
CO4:	3	2	3	1	2	3	-	-	-	3	3

Sem – IV Code/Subject: 21BCA4C10L/ Python Programming

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	3	-	2	-	3	3
CO2:	3	3	3	3	3	3	-	-	-	3	3
CO3:	3	3	3	3	3	3	-	-	-	3	3
CO4:	3	3	3	3	3	3	-	-	-	3	3
CO5:	3	3	3	3	3	3	-	-	-	3	3
CO6:	3	3	3	3	3	3	-	-	-	3	3

Sem – IV Code/Subject: 21BCA4C11L/ Computer Multimedia and Animation

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	1	-	3	-	3	3
CO2:	3	3	3	3	3	1	-	3	-	3	3
CO3:	3	3	3	3	3	2	-	3	-	3	3

Sem – IV Code/Subject: 21BCA4C12L/ Operating System Concepts

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	1	1	2	2	-	-	-	-	3	3
CO2:	3	2	1	2	2	-	-	-	-	3	3
CO3:	3	2	2	2	2	-	-	-	-	3	3
CO4:	3	3	3	3	3	2	-	-	-	3	3

Sem – V

Code/Subject: BCADSC5.1/ Advanced Java

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	3	-	3	-	3	3
CO2:	3	3	3	3	3	3	-	3	-	3	3
CO3:	3	3	3	3	3	3	-	3	-	3	3
CO4:	3	3	3	3	3	3	-	3	-	3	3
CO5:	3	3	3	3	3	3	-	3	-	3	3

Sem – V

Code/Subject: BCADSC5.2/ Data Warehousing and Mining

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	-	-	-	3	3	1	2	-	3	3
CO2:	3	-	-	-	2	2	-	-	-	3	3
CO3:	3	1	-	-	2	2	-	-	-	3	3
CO4:	3	2	2	-	2	3	-	-	-	3	3
CO5:	3	-	2	-	3	3	-	-	-	3	3

Sem – V

Code/Subject: BCADSC5.3/ Network Security

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	-	-	-	3	3	1	2	-	3	3
CO2:	3	-	-	-	2	2	-	-	-	3	3
CO3:	3	1	-	-	2	2	-	-	-	3	3
CO4:	3	2	2	-	2	3	-	-	-	3	3
CO5:	3	-	2	-	3	3	-	-	-	3	3

Sem – V

Code/Subject: BCADSE5.4/.Net using C#

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	3	-	3	-	3	3
CO2:	3	3	3	3	3	2	-	3	-	3	3
CO3:	3	3	3	3	3	3	-	3	-	3	3
CO4:	3	3	3	3	3	3	-	3	-	3	3
CO5:	3	3	3	3	3	3	-	3	-	3	3

Sem – V Code/Subject: BCADSE5.5/PHP

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	1	-	3	-	3	3
CO2:	3	3	3	3	3	1	-	3	-	3	3
CO3:	3	3	3	3	3	2	-	3	-	3	3
CO4:	3	3	3	3	3	1	-	3	-	3	3
CO5:	3	3	3	3	3	1	-	3	-	3	3

Sem – V Code/Subject: BCADSE5.6/C# Lab

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	3	-	3	-	3	3
CO2:	3	3	3	3	3	2	-	3	-	3	3
CO3:	3	3	3	3	3	3	-	3	-	3	3
CO4:	3	3	3	3	3	3	-	3	-	3	3
CO5:	3	3	3	3	3	3	-	3	-	3	3

Sem – V Code/Subject: BCADSE5.7/PHP Lab

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	1	-	3	-	3	3
CO2:	3	3	3	3	3	1	-	3	-	3	3
CO3:	3	3	3	3	3	2	-	3	-	3	3
CO4:	3	3	3	3	3	1	-	3	-	3	3
CO5:	3	3	3	3	3	1	-	3	-	3	3

Sem – V Code/Subject: BCADSE5.8/Advanced Java Lab

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	3	-	3	-	3	3
CO2:	3	3	3	3	3	3	-	3	-	3	3
CO3:	3	3	3	3	3	3	-	3	-	3	3
CO4:	3	3	3	3	3	3	-	3	-	3	3
CO5:	3	3	3	3	3	3	-	3	-	3	3

Sem – V

Code/Subject: BCADSEC5.9/Personality Development

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	-	-	-	-	-	3	3	3	3	3
CO2:	3	-	-	-	-	-	3	3	3	3	3
CO3:	3	-	-	-	-	-	3	3	3	3	3
CO4:	3	-	-	-	-	-	3	3	3	3	3
CO5:	3	-	-	-	-	-	3	3	3	3	3

Sem – VI

Code/Subject: BCADSC6.1/ Cyber Security

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	-	-	-	3	3	2	-	3	3	3
CO2:	3	-	-	-	2	2	2	-	3	3	3
CO3:	3	1	-	-	2	2	2	-	3	3	3
CO4:	3	2	2	-	2	3	2	-	3	3	3
CO5:	3	-	2	-	3	3	2	-	3	3	3

Sem – VI

Code/Subject: BCADSC6.2/ Artificial Intelligence

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	3	1	2	2	3	3
CO2:	3	3	3	3	2	2	-	-	2	3	3
CO3:	3	3	3	3	2	2	-	-	2	3	3
CO4:	3	3	3	3	2	3	-	-	2	3	3
CO5:	3	3	3	3	3	3	-	-	2	3	3

Sem – VI

Code/Subject: BCADSC6.3/ Software Testing

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	-	-	-	3	3	1	2	-	3	3
CO2:	3	-	-	-	2	2	-	-	-	3	3
CO3:	3	1	-	-	2	2	-	-	-	3	3
CO4:	3	2	2	-	2	3	-	-	-	3	3
CO5:	3	-	2	-	3	3	-	-	-	3	3

Sem – VI

Code/Subject: BCADSE6.4/Cloud Computing

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	-	-	-	3	3	1	2	-	3	3
CO2:	3	-	-	-	2	2	-	-	-	3	3
CO3:	3	1	-	-	2	2	-	-	-	3	3
CO4:	3	2	2	-	2	3	-	-	-	3	3
CO5:	3	-	2	-	3	3	-	-	-	3	3

Sem – VI

Code/Subject: BCADSE6.5/Image Processing

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	-	-	-	3	3	1	2	-	3	3
CO2:	3	-	-	-	2	2	-	-	-	3	3
CO3:	3	1	-	-	2	2	-	-	-	3	3
CO4:	3	2	2	-	2	3	-	-	-	3	3
CO5:	3	-	2	-	3	3	-	-	-	3	3

Sem – VI

Code/Subject: BCADSE6.6/Software Testing Lab

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	3	-	3	-	3	3
CO2:	3	3	3	3	3	3	-	3	-	3	3
CO3:	3	3	3	3	3	3	-	3	-	3	3
CO4:	3	3	3	3	3	3	-	3	-	3	3
CO5:	3	3	3	3	3	3	-	3	-	3	3

Sem – VI

Code/Subject: BCADSE6.7/Project Work

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	3	3	3	3	3	-	3	-	3	3
CO2:	3	3	3	3	3	3	-	3	-	3	3
CO3:	3	3	3	3	3	3	-	3	-	3	3
CO4:	3	3	3	3	3	3	-	3	-	3	3
CO5:	3	3	3	3	3	3	-	3	-	3	3

Sem – VI

Code/Subject: BCASEC6.8/ Communication Skills

COS/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1:	3	-	-	-	-	-	3	3	3	3	3
CO2:	3	-	-	-	-	-	3	3	3	3	3
CO3:	3	-	-	-	-	-	3	3	3	3	3
CO4:	3	-	-	-	-	-	3	3	3	3	3
CO5:	3	-	-	-	-	-	3	3	3	3	3

BCA V and VI Semester(CBCS) Evaluation mapping

EVALUATION MAPPING

Evaluation Pattern: 20 Marks Internal Assessment Test
80 Marks University End Examinations

Question Paper Pattern: 2 Marks (Objective)
5 Marks (Descriptive)
10 Marks (Numerical/Analytical/Descriptive and Programs)

Parameters of Patterns: 1. Skill Based
2. Understanding
3. Logical Ability
4. Numerical/Analytical
5. Descriptive/Diagram
6. Programming Skills

EVALUATION MAPPING

Sl.No	Parameter	Percentage
1	Skill Based	10%
2	Understanding	15%
3	Logical Ability	5%
4	Numerical/Analytical	15%
5	Descriptive/Diagram	20%
6	Programming Skills	35%
		100%

PRACTICAL EVALUATION MAPPING:

Evaluation Pattern : 20 Marks Internal Assessment Test
80 Marks University End Examination

Writing of Programs - 30 Marks
(15 Marks for each program)

Execution of programs -30Marks
(Each program 15 marks)
Viva-Voce - 10Marks
Journal -10Marks

Total - 80Marks

EVALUATION MAPPING

Evaluation of Project-Application Development

Sl.No	Parameter	Percentage
1	Skill Based	30%
2	Understanding	10%
3	Logical Ability	10%
5	Descriptive/Diagram	20%
6	Programming Skills	30%
		100%

I. Internal Assessment evaluation: Total Marks: 40

A. First Internal Assessment Max.Marks: 10 **Time: 30 mints**

Students shall present the details of the project work carried out that includes the following

- Synopsis contents
- Problem identification and proposed solution
- SAD, SRS
- Database Design
- Functions

PowerPoint slides shall be used by the students to present the work carried out.

B. Second Internal Assessment Max. Marks: 10 **Time: 30 mints**

Students shall present the details of the project work carried out that includes the following

- Coding details
- Forms and reports
- Demo of the application developed

(Note: IA marks shall be assigned by the concerned guide monitoring the project work of the students.)

II. External Exam Evaluation Process : Total marks=160

Max. Marks: 160 **Time: 3 Hours**

1. Dissertation/Project Report evaluation : 20
2. Presentation/Demo of the application developed : 50
3. Viva-voce : 10

Total Marks: 80

Final Marks for Project: IA marls: 40 External Exam Marks: 160
Total Marks: 200

EVALUATION MAPPING FOR PROJECT

Sl.No	Parameter	Percentage
1	Skill Based	30%
2	Understanding	10%
3	Logical Ability	10%
5	Descriptive/Diagram	20%
6	Programming Skills	30%
		100%

BCA I and IV Semester (NEP) Evaluation mapping

EVALUATION MAPPING

Evaluation Pattern: 40 Marks Internal Assessment Test
60 Marks University End Examinations

Question Paper Pattern: 2 Marks (Objective)
5 Marks (Descriptive)
10 Marks (Numerical/Analytical/Descriptive and Programs)

Parameters of Patterns: 1. Skill Based
2. Understanding
3. Logical Ability
4. Numerical/Analytical
5. Descriptive/Diagram
6. Programming Skills

EVALUATION MAPPING

Sl.No	Parameter	Percentage
1	Skill Based	10%
2	Understanding	15%
3	Logical Ability	5%
4	Numerical/Analytical	15%
5	Descriptive/Diagram	20%
6	Programming Skills	35%
		100%

PRACTICAL EVALUATION MAPPING:

Evaluation Pattern : 25 Marks Internal Assessment Test
25 Marks University End Examination

Writing of Programs - 06 Marks
(03 Marks for each program)

Execution of programs - 14 Marks
(07 Marks for each program)

Viva-Voce - 05Marks

Total - 25 Marks

EVALUATION MAPPING

Sl.No	Parameter	Percentage
1	Skill Based	30%
2	Understanding	10%
3	Logical Ability	10%
5	Descriptive/Diagram	20%
6	Programming Skills	30%
		100%

3/7/23

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