B.L.D.E.ASSOCIATION'S
S.B ARTS AND K.C.P.SCIENCE COLLEGE,VIJAYAPUR
RE-ACCREDITED AT THE 'B++' LEVEL
Bachelor of Science
Department of Computer Science
PROGRAM OUTCOMES (2023-24

POs	DESCRIPTIONS
PO1:	Provide students with fundamental knowledge and ability to expertise in Computer Science.
PO2:	Provide insight to problem solving to succeed in Technical Profession through precise education and to prepare students to excel in postgraduate programs.
PO3:	To inculcate in students professional, effective communication skills, team work, multidisciplinary approach and an ability to relate issues to broader social context.
PO4:	Prepare students to be aware of excellence, leadership, written ethical codes and guidelines and lifelong learning needed for successful professional career by providing them with an excellent academic environment.
PO5:	Empower the students in academic, social, psychological and economic arenas by developing relevant competencies.
PO6:	Interpret and apply the implications of environment awareness initiatives incorporated in curriculum.
PO7:	Participation and contribution to community development activities through NCC, NSS etc.
PO8:	Acquire sufficient knowledge base in the Domain Specific area leading to the pursuit of advanced level of study in the chosen Domain Specific area.
PO9:	Adaptability and capacity building to the ever changing needs of the industry and employment opportunities.
PO10	Inculcate the human values through curricular, co-curricular and extracurricular activities.

Course Outcome

CLASS	PAPER	COURSE OUT COMES	DESCRIPTIONS
B.Sc I SEM	Computer Fundamentals and Programming in C		**After completing this course satisfactorily, a student will be able to**
		CO1	Confidently operate Desktop Computers to carry out computational tasks.
		CO2	Understand working of Hardware and Software and the importance of operating systems.
		CO3	Understand programming languages, number systems, peripheral devices, networking, multimedia and internet concepts.
		CO4	Read, understand and trace the execution of programs written in C language.
		CO5	Write the C code for a given problem.
		CO6	Perform input and output operations using programs in C.
		CO7	Write programs that perform operations on arrays.
	C Programming Lab	CO1	Basic Computer Proficiency
		CO2	Familiarization of Basic Software – Operating System, Word Processors Internet Browsers, Integrated Development Environment (IDE) with Examples.
		CO3	Type Program Code, Debug and Compile basic programs covering C Programming

CLASS	PAPER	COURSE OUT COMES	DESCREPTIONS
B.Sc II SEM	Data Structures using C		**After completing this course satisfactorily, a student will be able to**
		CO1	Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms.
		CO2	Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs.
		CO3	Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs
		CO4	Demonstrate different methods for traversing trees.
		CO5	Compare alternative implementations of data structures with respect To performance.
		CO6	Describe the concept of recursion, give examples of its use.
		CO7	Discuss the computational efficiency of the principal algorithms for sorting and searching.
	Data Structure Lab	CO1	Gain a clear understanding of fundamental data structures such as arrays, linked lists, stacks, queues, and their applications.
		CO2	Develop the ability to implement various data structures (e.g., linked lists, stacks, queues, trees, graphs) in C.
		CO3	Design and analyze algorithms for manipulating data structures.

CLASS	PAPER	COURSE OUT COMES	DESCREPTIONS
B.Sc III SEM	Object Oriented Programming in JAVA		After completing this course satisfactorily, a student will be able to
		CO1	Explain the object-oriented concepts and JAVA.
		CO2	Write JAVA programs using OOP concepts like Abstraction, Encapsulation, Inheritance and Polymorphism.
		CO3	Implement Classes and multi-threading using JAVA.
		CO4	Demonstrate the basic principles of creating Java applications with GUI.
	JAVA Lab	CO1	Develop a strong understanding of the syntax and semantics of the Java programming language.
		CO2	Write and execute Java programs to solve basic computational problems.
		CO3	Understand and apply OOP principles such as encapsulation, inheritance, polymorphism, and abstraction.

CLASS	PAPER	COURSE OUT COMES	DESCREPTIONS
B.Sc IV SEM	Database Management System	After completing this course satisfactorily, a student will be able to	
		CO1	Explain the various data base 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	Identify entities and relationships and draw ER diagram for a given real-world problem.
		CO5	Convert an ER diagram to a database schema and deduce it to the desired normal form.
		CO6	Formulate queries in Relational Algebra, Structured Query Language (SQL) for database manipulation.
		CO7	Explain the transaction processing and concurrency control techniques.
	DBMS LAB	CO1	To create tables, execute queries and PL/SQL programs.
		CO2	Analyze and optimize database performance by creating efficient queries and using indexing.
		CO3	Understand query execution plans and use them to identify and resolve performance bottlenecks.

CLASS	PAPER	COURSE OUT COMES	DESCREPTIONS
B.Sc V SEM	Paper-I Programming in PYTHON		**After completing this course satisfactorily, a student will be able to**
		CO1	Setup Python to develop simple applications.
		CO2	Understand the basic concepts in Python Programming.
		CO3	Learn how to write, debug and execute Python programs.
		CO4	Understand and demonstrate the use of advanced data types such as tuples, dictionaries and lists, Tuples and Sets.
		CO5	Design solutions for problems using object-oriented concepts in Python.
		CO6	Use and apply the different Python Libraries for GUI Interface, Data Analysis and Data Visualisation.
		CO7	Extend the knowledge of python programming to build successful career in software development.
	Paper-I Programming in PYTHON LAB	CO1	Understand Basic Python Programming Skills: syntax and semantics of Python. Write, execute, and debug basic Python programs.
		CO2	Apply problem-solving skills to design, implement, and test Python-based solutions

CLASS	PAPER	COURSE OUT COMES	DESCRIPTIONS
B.Sc V SEM	Paper-II Computer Networks	After completing this course satisfactorily, a student will be able to	
		CO1	Define various data communication components in networking.
		CO2	Describe networking with reference to different types of models and topologies.
		CO3	Understand the need for Network and various layers of OSI and TCP/IP reference model.
		CO4	Explain various Data Communications media.
		CO5	Describe the physical layer functions and components
		CO6	Identify the different types of network topologies and Switching methods.
		CO7	Describe various Data link Layer Protocols.
		CO8	Identify the different types of network devices and their functions within a network.
		CO9	Analyze and Interpret various Data Kink Layer and Transport Layer protocols.
		CO10	Explain different application layer protocols.
	Paper-II Computer Networks Laboratory	CO1	Understanding Network Protocols : various network protocols such as TCP/IP, HTTP, FTP, SMTP, and DNS.
		CO2	Network Configuration and Management : configure and manage network devices such as routers, switches, and firewalls.
		CO3	Network Simulation and Analysis: Analyze network traffic and performance metrics.

CLASS	PAPER	COURSE OUT COMES	DESCREPTIONS
B.Sc VI SEM	Paper-I Web Technologies		After completing this course satisfactorily, a student will be able to
		CO1	Understand basics of Internet technology.
		CO2	Use of HTML in designing static web pages.
		CO3	Use of CSS in designing attractive web pages.
		CO4	Use of Java Script in designing dynamic web pages.
		CO5	Students are able design a own website at the end of the course.
	Paper-I Web Technology Lab	CO1	Gain proficiency in HTML, CSS, and JavaScript for building and styling web pages
		CO2	Learn to write and integrate client-side scripts using JavaScript.
		CO3	Understand concepts like DOM manipulation, event handling, and form validation.

CLASS	PAPER	COURSE OUT COMES	DESCREPTIONS
B.Sc VI SEM	**Project Work**	**After completing this course satisfactorily, a student will be able to**
		CO1	Students will learn to identify a problem, analyze it, and design solutions using appropriate computational models and algorithms. Students will be able to choose the correct data structures and algorithms for solving real-world problems.
		CO2	Students will be able to design, implement, and test software applications based on specified requirements. They will use modern programming languages (e.g., Java, Python, C++) and development tools (e.g., IDEs, version control systems).
		CO3	Students will work in teams (if required) to collaborate on a project, managing tasks, and deadlines effectively. They will learn to communicate ideas clearly within a team and contribute to collective problem-solving.
		CO4	Students will implement the software development lifecycle in their projects, including requirement analysis, design, implementation, testing, and deployment phases. They will understand the significance of documentation throughout the project life cycle.
		CO5	Students will learn to debug their code effectively and optimize their software solutions for efficiency in terms of both time and space.
		CO6	Students will design and perform tests to validate the correctness of the system. They will learn different testing methodologies, such as unit testing, integration testing, and functional testing.
		CO7	Students will prepare technical documentation and project reports to explain their project's objectives, design, development, and outcomes. They will present their projects to an audience, highlighting key features, challenges, and solutions.

CLASS	PAPER	COURSE OUT COMES	DESCREPTIONS
BA I SEM (OEC)	C Programming Concepts		After completing this course satisfactorily, a student will be able to
		CO1	Read, understand and trace the execution of programs written in C language
		CO2	Write the C code for a given problem
		CO3	Perform input and output operations using programs in C
		CO4	Write user defined functions to perform a task
BA II SEM (OEC)	Web Designing	CO1	Read, understand and trace the execution of programs
		CO2	Write the code for a given problem
		CO3	Perform input and output operations using programs
		CO4	Write user defined functions to perform a task
BA III SEM (OEC)	Python Programming Concepts	CO1	Explain the fundamentals of Computers.
		CO2	Explain the basic concepts of Python Programming.
		CO3	Demonstrate proficiency in the handling of loops and the creation of functions.
		CO4	Identify the methods to create and store strings.

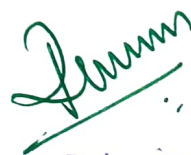| CLASS	PAPER	COURSE OUT COMES	DESCREPTIONS
B.Sc VI SEM	Paper-II Statistical Computing & R Programming		After completing this course satisfactorily, a student will be able to
		CO1	Explore fundamentals of statistical analysis in R environment.
		CO2	Describe key terminologies, concepts and techniques employed in Statistical Analysis.
		CO3	Define Calculate, Implement Probability and Probability Distributions to solve a wide variety of problems.
		CO4	Conduct and interpret a variety of Hypothesis Tests to aid Decision Making.
		CO5	Understand, Analyze, and Interpret Correlation Probability and Regression to analyses the underlying relationships between different variables.
	Paper-II R Programming Lab	CO1	Data Structures in R: Understand and use various data structures in R, such as vectors, matrices, lists, and data frames.
		CO2	Statistical Analysis : Perform basic statistical analyses using R, including descriptive statistics, hypothesis testing, and regression analysis
		CO3	Working with R Packages : Learn to install, load, and use various R packages for enhanced functionality

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