PARAMEKKAVU COLLEGE OF ARTS AND SCIENCE
Affiliated to University of Calicut, U.O.No. 2436/2013/CU
(Managed by Sree Paramekkavu Educational, Cultural and Charitable Trust)
MLA Road, Punkunnam, Thrissur 680 002. Ph : 0487 2960800, 9961068618
E-mail : paramekkavucas@yahoo.in, Website : www.paramekkavuartsandsciencecollege.com

PARAMEKKAVU COLLEGE OF ARTS AND SCIENCE

COURSE OUTCOME, PROGRAMME OUTCOME, PROGRAMME SPECIFIC OUTCOME, PROGRAMME EDUCATIONAL OBJECTIVES

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DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION

BACHELOR OF SCIENCE IN COMPUTER SCIENCE (B.SC. CS)

PROGRAMME OUTCOME:

PO1	Acquire the ability to apply the basic principles of logic and science to thoughts, actions and interventions.
PO2	Perceive knowledge as a comprehensive, interrelated and integrated faculty of the human mind.
PO3	Generate hypothesis and articulate assent or dissent by employing both reason and creative thinking.
PO4	Develop the ability to chart out a progressive direction for actions and interventions by learning to recognize the presence of hegemonic ideology within certain dominant notions.
PO5	Develop self-critical abilities and the ability to view positions, problems and social issues from plural perspectives.
PO6	Participate in nation building by adhering to the principles of scientific temper, sovereignty, socialism, secularism, democracy and the values that guide a republic.
PO7	Develop gender sensitive attitudes, environmental awareness, the ability to understand and resist various kinds of discriminations and empathetic social awareness about various kinds of marginalization.
PO8	Understand the issues related to the current environmental problems and apply the principles of science for a sustainable development in an interdisciplinary manner.
PO9	Develop communication skill in English and local languages through different media.
PO10	Learn to articulate analysis, synthesis, and evaluation of situations and themes in a scientific manner.

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PROGRAMME SPECIFIC OUTCOME: (B.SC. COMPUTER SCIENCE)

PSO1	An ability to understand the principles and working of computer systems.
PSO2	An ability to understand the structure and development methodologies of software systems.
PSO3	Familiarity and practical competence with a broad range of programming language and open-source platforms.
PSO4	An ability to apply mathematical methodologies to solve computation task, model real world problem using appropriate data structure and suitable algorithm.

PROGRAMME EDUCATIONAL OBJECTIVES: (B.SC. COMPUTER SCIENCE)

PEO1	To empower the students to cope up with emerging technologies that will help them to build a profession
PEO2	To upskill the students in such a way that to analyze a problem in an effective way and find the best possible solution that meets the needs of global companies
PEO3	To promote the students to organize programs by making use of computer application skills to reach out to the unprivileged in the society

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COURSE OUTCOMES: B.SC. COMPUTER SCIENCE

Semester 1		
Core/Common/ Complimentary	**Course Code & Name of Course,**	**Course Outcomes**
Core	BCS1B01 – Computer Fundamentals and HTML	1. Familiar with fundamental concepts of Computer hardware and software
		2. Have a knowledge of different Number system, Digital codes and Boolean Algebra
		3. Understand the problem-solving aspect
		4. Demonstrate the algorithm and flow chart for the given problem.
		5. Design a Webpage with CSS
COMPLEMENTARY	MTS1C01 Mathematics - 1	1. Fundamental ideas of limit, continuity and differentiability
		2. How to apply these ideas in drawing the graphs of function
		3. To find solution of maximum minimum problems using the idea of derivatives
		4. To solve the area problem
		5. The problem of finding the length of the arc
Complementary	CSC1C01 - Computer Fundamentals	1. To understand the basic number system, Conversion and Computer Codes
		2. To learn Boolean Algebra and different axioms and theorems in it
		3. To understand the basic Computer Organization
		4. To Familiarize with algorithms and flowcharts
Semester 2		

CORE	BCS2B02 Problem Solving using C	1. Interpret the basic principles of C Programming.
		2. Acquire decision making and looping concepts.
		3. Design and develop modular programming.
		4. Explore usage of Arrays, strings, structures, union and files.
		5. Effective utilization of pointers and dynamic memory allocation
COMPLIMENTARY	MTS2C02 Mathematics	1. To represent points in polar coordinates and convert from one system to another
		2. Do the graph in in polar coordinates.
		3. Find the derivatives and anti-derivatives of hyperbolic and inverse hyperbolic functions
		4. Solve a system of linear equations using matrix theory
		5. Find the convergence and divergence of series
CORE LAB	BCS2B03 Programming Laboratory I: Lab Exam of 1st & 2nd Semester - HTML and Programming in C	1. Analyze a web page and identify its elements and attributes.
		2. Create web pages using HTML5 and Cascading Style Sheets.
		3. Design and develop a webpage with Hyperlinks
		4. Enhance their analyzing and problem-solving skills and use the same for writing programs in C.
		5. To write diversified programs using C language
Complementary	CSC2C02- Fundamentals of System Software, Networks and DBMS	1. To understand the Concept of System Software
		2. To learn the Computer Network
		3. To familiarize the database management System

Semester 3		
COMMON	A11 Python Programming	1. Explain basic principles of Python programming language
		2. Implement decision making and loop statements in Python.
		3. Implement GUI applications using Python
		4. Explain modular programming concepts using Python
		5. Familiarize with List, Tuple, Dictionary concepts in Python
COMMON	A12 Sensors and Transducers	1. Explain resistance, inductance and capacitance transducers.
		2. Perceive the concepts of temperature transducers.
		3. Perceive the concepts level transducers and pressure
		4. Perceive the concepts level transducers and pressure
		5. Explain flow transducers, electromagnetic transducers, radiation sensors and sound transducers
Core	BCS3B04 Data Structures using C	1. To be familiar with 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
		2. To have a knowledge of complexity of basic operations like insert, delete, search on these data structures.

		3. Ability to choose a data structure to suitably model any data used in computer applications.
		4. Design programs using various data structures including hash tables, Binary and general search trees, graphs etc.
		5. Implement and know the applications of algorithms for sorting, pattern matching
Complementary	MTS3C03 Mathematics	1. Work on the idea of limit continuity and derivative of vector valued functions
		2. Understand the properties and applications of the gradient of a function.
		3. Understand the line integral, surface integral and triple integral.
		4. Understand the definition and evaluation of complex integral
		5. Apply double integral and triple integral
Complementary	CSC3C03-Problem solving using C	1. To learn the basic syntax of C language
		2. To understand the Control, conditional, loop statements in C
		3. To familiarize with the user defined functions, pointers, and datafiles in C.
Semester 4		
COMMON	A14 Microprocessors Architecture and Programming	1. To study general architecture of microprocessor
		2. To write assembly language programs, both simple programs and interfacing programs
		3. To know how to interface peripheral devices with 8085
		4. To study the architecture of 8086 microprocessor

COMMON	A13 Data Communication and Optical Fibers	1. To Acquaint with the structure of Data Communications System and its components. 2. To Familiarize with different network terminologies and transmission media 3. To gain knowledge of the different multiplexing techniques, Telephone system, Mobile System-GSM 4. To become familiar with the functions of a Datalink layer and switching 5. To acquire the knowledge of Optical Fibre Cable and its working
CORE	BCS4B05 Database Management System and RDBMS	1. Gain knowledge of database systems and database management system software 2. Ability to model data in applications using conceptual modelling tools such asER Diagrams and design data base schemas based on the model. 3. Formulate, using SQL, solutions to a broad range of query and data update problems. 4. Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database. 5. Be acquainted concurrency control.
Complementary	MT4SC04 Mathematics	1. To learn major classification of differential equation 2. To learn how to formulate a mathematical model of a physical process 3. To learn about linear models

		4. To learn the techniques of solving partial differential equations
		5. To learn to solve first order differential equations
Complementary	CSC4C04-Data Structures Using C	1. To learn the Concepts of data structure using C.
		2. To understand the concepts of Linked Lists.
		3. To learn the different searching and sorting techniques.
Core Lab	BCS4B06-Programming Laboratory II: Lab Exam Of 3rd And 4th Semester - Data Structures and RDBMS	1. Make use of typical data definitions and manipulation commands
		2. Test the implementation of nested and join queries
		3. Develop simple application using views, sequences and synonyms.
		4. Inspect and implement applications that require front-end tools
		5. Familiarizing with different data structures tools like searching, sorting, Linked List etc.
Complementary lab	CSC4C05 Programming Lab: C and Data structure	1. To Acquire the practical knowledge of C language and data structures
		2. To obtain knowledge of the implementation of searching, sorting, Linked list
Semester 5		
CORE	BC5B07 Computer Organization and Architecture	1. To make students understand the basic structure, operation and characteristics of a digital computer.
		2. To familiarize with Computer Instruction and Interrupt Design
		3. To make students know the different types of control unit and Addressing Modes

		4. To familiarize with the Memory organization including cache memories and virtual memory
		5. To understand the I/O devices and standard I/O interfaces
CORE	BCS5B08 Java Programming	1. Knowledge of the structure and model of the Java programming language,
		2. Use the Java programming language for various programming technologies
		3. Develop software in the Java programming language,
		4. Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements
CORE	BCS5B09 Web Programming Using PHP	1. To understand basics of the Internet and World Wide Web
		2. To learn basic skill to develop responsive web applications
		3. To acquire the knowledge of HTML and CSS
		4. To understand basic concept of client-side scripting language -JavaScript
		5. To understand the server-side scripting language - PHP
		6. To learn about the integration of PHP and PostgreSQL
CORE	BCS5B10 Principles of Software Engineering	1. Ability to apply software engineering principles and techniques.
		2. To produce efficient, reliable, robust and cost-effective software solutions
		3. Familiarize with Unified Modelling Language

		4. Acquire the basics of software testing and maintenance phase
Open Course	BCS5D01 Introduction to Computers and Office Automation	1. Understand different types of computers
		2. Learn documentation using Word processing software such as MS word and Open Office Writer
		3. Learn calculations using spreadsheet MS Excel and Open Office Writer
		4. Learn presentations using Open Office Impress/MS-Power Point.
Semester 6		
CORE	BCS6B11 Android Programming	1. To gain knowledge of developing end user application using Android SDK
		2. To familiarize with Android Resources
		3. To acquaint with user interfaces development in Android
		4. To acquire knowledge about creating menus and operating files in Android
Core	BCS6B12 Operating Systems	1. To Familiarize with the Objectives unction sand types of Operating System
		2. To have a basic knowledge about process, Threads, Deadlock
		3. To understand the knowledge of Linux shell programming
		4. To learn about CPU scheduling and memory management.
Core	BCS6B13 Computer Networks	1. To understand about different network terminologies
		2. To familiarize with different layers of network

		3. To understand the functions of datalink layer and network layer
		4. To familiarize with the functions of Transport layer
		5. To understand the concept of network security and Cryptography
Elective	BCS6C08 Computer Graphics	1. Learning basics of video display devices
		2. Learning how to generate Lind, circle and polygon using algorithms
		3. Learning two dimensional transformations
		4. Learning line clipping, polygon clipping using algorithms
		5. Learning different color models
Core Lab	BCS6B14 Programming Laboratory III: Lab Exam of Vth Semester Java and PHP Programming	1. To learn about the Object-Oriented Concepts in Java Programming
		2. To understand the practical knowledge of Web programming using PHP
Core Lab	BCS6B15 - Programming Laboratory IV: Lab Exam of Android and Linux Shell Programming	1. To learn the practical knowledge of Android Programming
		2. To familiarize with the practical knowledge of shell programming
Project and Industrial visit	BCS6B17 Project Work and Industrial Visit	1. Acquire the implementation level knowledge and interaction with industry.
		2. Project bridges theory and practice by building high-quality software through the full SDLC.
		3. Capstone project integrates all coursework to build robust, industry-standard software through the entire SDLC, from problem definition to documented, efficient delivery.

		4. This course provides firsthand exposure to the world of scientific research and software development through visits to national research institutions and companies.