



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

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



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DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION

BACHELOR OF COMPUTER APPLICATION (BCA)

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: BCA

PSO1	Understand the basic principles of program development by identifying and formulating problems and integrate resources to decisions using the problem-solving approach
PSO2	Understand data-based reasoning through translation of data into abstract concepts using computing technology-based tools and develop real life applications
PSO3	Understand and recognize different value system and the moral dimensions of software development and applications and their outcomes and accept the responsibility for them
PSO4	Design web applications by understanding the global perspective and make meaning of the world by connecting people's ideas, media and technology.

PROGRAMME EDUCATIONAL OBJECTIVES: BCA

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 OUTCOME: BCA

Semester 1		
Core/Common/ Complimentary	Course Code & Name of Course,	Course Outcomes
Core	BCA1B01 – 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
Core	BCA1C02- Discrete Mathematics	1. To learn mathematical logic and Boolean algebra
		2. Understand the concept of set theory and mathematical logic
		3. Analyze logical propositions via truth table
		4. Understand mathematical foundation for computer science
		5. Analyze given problem and develop an algorithm to solve the problem
Core courses	BCA1C01 – Mathematical Foundation for Computer Applications	1. To learn the basic principles of linear algebra and vectors
		2. To learn the basic principles of differential and integral calculus
		3. To learn mathematical modelling using ordinary and partial equations
		4. To understand analyze and create mathematical arguments
		5. To understand basic concept of number theory



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Semester 2		
CORE	BCA2B02 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
CORE	BCA2C04 - Operations Research	1. To get a general introduction in solving linear programming problems
		2. To get a general understanding of network analysis techniques
		3. To get a general understanding of different mathematical models
		4. To understand the methodology of OR problem solving and formulate linear programming problem
		5. To develop formulation skills in field of game theory and assignment problems
CORE LAB	BCA2B03 Programming Laboratory I: HTML and Programming in C	1. Analyse 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



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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	BCA3B04 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.



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		<ol style="list-style-type: none"> 3. Ability to choose a data structure to suitably model any data used in computer applications.
		<ol style="list-style-type: none"> 4. Design programs using various data structures including hash tables, Binary and general search trees, graphs etc.
		<ol style="list-style-type: none"> 5. Implement and know the applications of algorithms for sorting, pattern matching
CORE	BCA3C05 Computer Oriented Numerical and Statistical Methods	<ol style="list-style-type: none"> 1. To learn the floating-point arithmetic 2. Learning to solve linear equations 3. To learn numerical differentiation and integration 4. To learn the basics of statistics and probability theory 5. The design and analysis of techniques to give approximate but accurate solution to hard problems
CORE	BCA3C06 Theory of Computation	<ol style="list-style-type: none"> 1. Will apply knowledge of computing and mathematics appropriate to the discipline 2. Learn about Automata theory and its application in Language Design 3. Solve computational problems regarding their computability and complexity and prove the basic results of the theory of automat 4. Discuss key notions of context free languages 5. Learn about Turing Machines and Pushdown Automata and understand Linear Bound Automata and its applications.
Semester 4		



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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
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
CORE	BCA4B05 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 as ER Diagrams and design data base schemas based on the model.
		3. Formulate, using SQL, solutions to a broad range



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		<p>of query and data update problems.</p> <p>4. Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database.</p> <p>5. Be acquainted concurrency control.</p>
CORE	BCA4C07 E-Commerce	<p>1. Ability to understand the evolution of ECommerce</p> <p>2. Develops the ability to understand Ecommerce in India</p> <p>3. Understand the types of ethical issues and how to be secure in online transaction</p> <p>4. Understand e-payment system</p> <p>5. Understand the online marketing techniques</p>
CORE	BCA4C08 Computer Graphics	<p>1. Learning basics of video display devices</p> <p>2. Learning how to generate Line, circle and polygon using algorithms</p> <p>3. Learning two dimensional transformations</p> <p>4. Learning line clipping, polygon clipping using algorithms</p> <p>5. Learning different color models</p>
CORE LAB	BCA4B06- Programming Laboratory II: Lab Exam of 3rd and 4th Semester - Data Structures and RDBMS	<p>1. Make use of typical data definitions and manipulation commands</p> <p>2. Test the implementation of nested and join queries</p> <p>3. Develop simple application using views, sequences and synonyms.</p> <p>4. Inspect and implement applications that require front-end tools</p> <p>5. Familiarizing with different data structures tools like</p>



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		searching, sorting, Linked List etc.
Semester 5		
CORE	BCA5B07 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	BCA5B08 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	BCA5B09 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



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		5. To understand the server-side scripting language -PHP
		6. To learn about the integration of PHP and PostgreSQL
CORE	BCA5B10 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
Semester 6		
CORE	BCA6B11 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	BCA6B12 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	BCA6B13 Computer Networks	1. To understand about different network terminologies
		2. To familiarize with different layers of network



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		<ol style="list-style-type: none"> To understand the functions of datalink layer and network layer To familiarize with the functions of Transport layer To understand the concept of network security and Cryptography
ELECTIVE	BCA6B16C Software Testing and Quality Assurance	<ol style="list-style-type: none"> Students will get an idea about how to recognize the Phases of Software project To get knowledge about classify and understand Black-Box Testing and its types Get an idea about what is System and Acceptance Testing To know about Performance Testing & Regression Testing Students will get overall idea about Test Planning, Management, Execution and Reporting:
Lab	BCS6B14 Programming Laboratory III: Lab Exam of Vth Semester Java and PHP Programming	<ol style="list-style-type: none"> To learn about the Object-Oriented Concepts in Java Programming To understand the practical knowledge of Web programming using PHP
Lab	BCA6B15 - Programming Laboratory IV: Lab Exam of Android and Linux Shell Programming	<ol style="list-style-type: none"> To learn the practical knowledge of Android Programming To familiarize with the practical knowledge of shell programming
Project and Industrial visit	BCA6B17 Project Work and Industrial Visit	<ol style="list-style-type: none"> Acquire the implementation level knowledge and interaction with industry. Project bridges theory and practice by building high-quality software through the full SDLC. Capstone project integrates all coursework to build robust, industry-standard software through the entire



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		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.