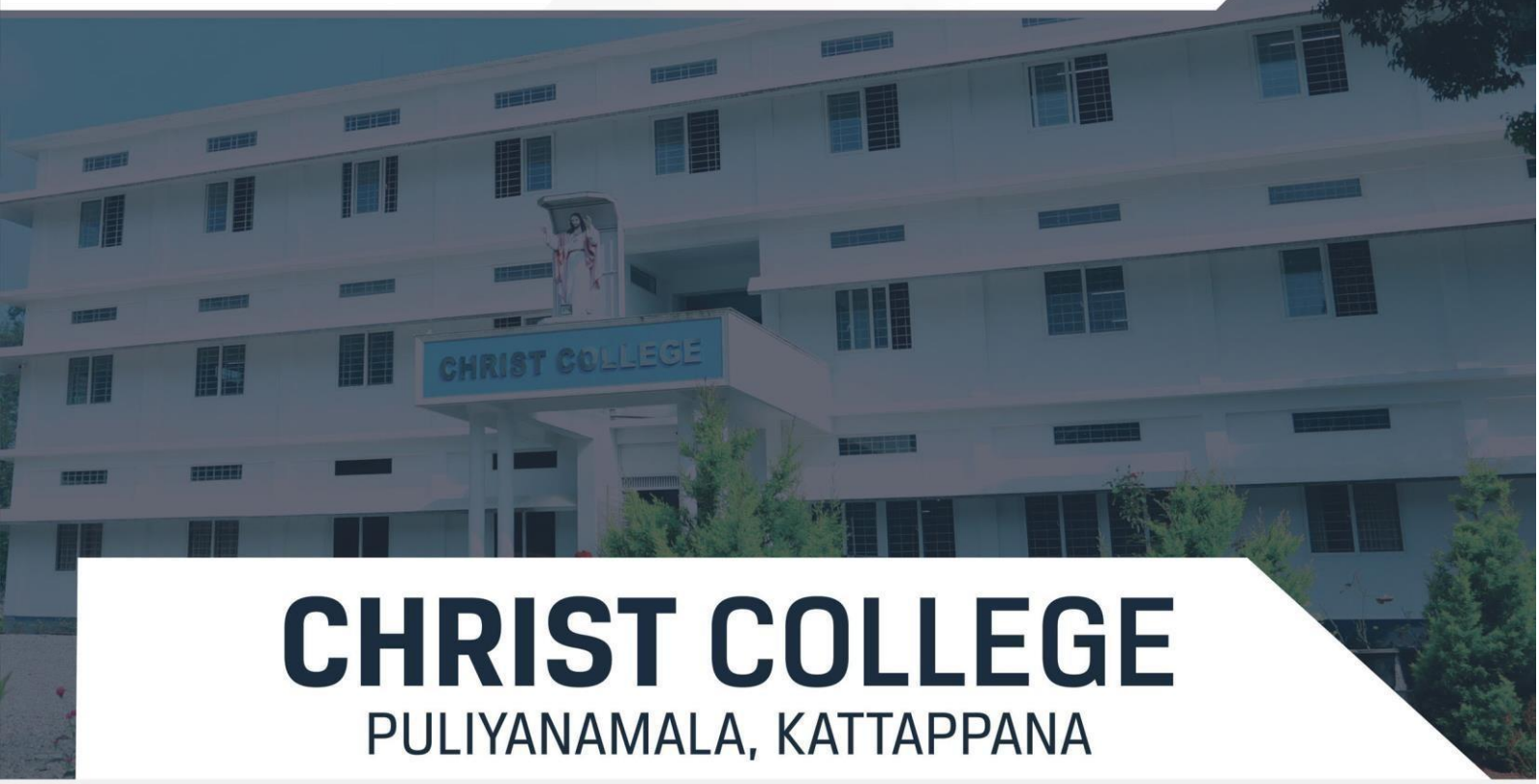
PROGRAMME OUTCOMES & COURSE OUTCOMES

BACHELOR OF COMPUTER APPLICATION



CHRIST COLLEGE

PULIYANAMALA, KATTAPPANA

Approved by UGC and Affiliated to MG University, Kottayam (3521/1/14/Ac A VII)

A Minority Institution Managed By CMI Fathers

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ACCREDITED BY NAAC WITH B+ GRADE

PROGRAMME OUTCOMES

PO1	To develop basic knowledge about computer, programming languages and their working.
PO2	To equip students with the tools necessary to effectively meet the challenges of an ever changing IT industry.
PO3	To inculcate specialized knowledge and skills required by software developers who are responsible primarily of dealing with software development and improving industrial relations.
PO4	To develop a sound theoretical base in the domain of networking concepts.
PO5	To understand trends in a computing as well as a broad spectrum of database management.

PROGRAMME SPECIFIC OUTCOMES

PSO1	Development of quantitative aptitude and programming skills of the learner.
PSO2	Transferring sophisticated computing knowledge and abilities and spreading awareness of recent breakthroughs in the computer science sector.
PSO3	Enabling students to build abilities in the field of networks as well as sophisticated theoretical and practical knowledge of computer programming andprocedures.
PSO4	Gaining knowledge in particular areas including cloud computing, Software engineering, databases, and processors.
PSO5	Fostering logical thinking and theoretical understanding of computer and software elements with a focus on project development.
PSO6	Assisting students in pursuing careers in the fields of professional computer application and programming.

BACHELOR OF COMPUTER APPLICATION

COURSE OUTCOMES

SEMESTER I

MG1DSCBCA100: FUNDAMENTALS OF PROGRAMMING USING C	
CO1	Demonstrate basic programming concepts.
CO2	Understand C Programming Basics such as Data types and Variables, Different types of operators
C03	Devise C programs using the concept of Decision statements and loop control statements.
CO4	Apply logic to use arrays and functions in C Programming Language.

MG1DSCBCA101: DIGITAL FUNDAMENTALS	
CO1	Demonstrate comprehension of number systems
CO2	Analyse working of logic gates, solve expressions using laws of Boolean algebra.
CO3	Illustrate the combinational logic circuits using multiplexers, demultiplexers and other circuits
CO4	Design sequential circuits using flip flops and registers

MG1DSCBCA103: DISCRETE MATHEMATICS	
CO1	Understand Concepts of Set Theory
CO2	Evaluate problems on Set theory.
CO3	Understand Propositional Logic.
CO4	Identify and Apply Propositional Logic.
CO5	Evaluate problems using Truth tables and Logical operators.
CO6	Understand And Analyse different types and properties of Relations, functions and Equivalence Relations.
CO7	Understand concepts of Matrix and Matrix Operators.
CO8	Evaluate the Inverse of a Matrix and solution of a system of Non homogeneous Equations

MG1MDCBCA100: CYBER LAWS AND SECURITY	
CO1	Describe cyber laws, IT Act, data protection and various cybercrimes.
CO2	Analyze and apply security measures during online transactions and financial activities.
CO3	Illustrate basic cryptographic techniques and importance of cyber forensic.

SEMESTER II

MG2CCRBCA100: MATHEMATICS FOUNDATION TO COMPUTER SCIENCE	
CO1	Apply Concepts of Graph Theory to solve real-life problems.
CO 2	Apply numerical methods to approximate solutions to mathematical problems.
CO 3	Understand the concepts of Linear programming and Operations Research, and Apply them using graphical and simplex methods.
CO4	Formulate and solve transportation problems

MG2CCRBCA101: DATA STRUCTURES	
CO1	Understand the fundamental concepts of Data Structures, the Representation of single and two-dimensional arrays and the implementation of various operations on them.
CO2	Analyse the representation of stacks and queues using arrays, operations on them and application of these data structures in problem-solving.
CO3	Demonstrate the ability to implement and manipulate various types of linked lists (singly, doubly, and circular).
CO4	Illustrate the basic concepts of Graphs and Trees and the operations on Binary search trees.
CO5	Implement Data Structures using C programming language.

MG2CCRBCA102: OPERATING SYSTEMS	
CO1	Describe the structure, types, services of operating system.
CO2	Analyse the performance of various process scheduling algorithms.
CO3	Appraise various techniques for process synchronization and deadlock handling.
CO4	Analyse the method employed for memory management in computer systems.

MG2SECBCA100: WEB TECHNOLOGIES	
CO1	Apply HTML and CSS to design and develop interactive web pages, incorporating forms, tables, multimedia, and navigation components.
CO2	Implement JavaScript for dynamic web page behavior, including DOM manipulation, form validation, and event handling, while integrating AJAX for asynchronous web applications.
C O 3	Design and develop fully functional, responsive, and interactive web applications using HTML, CSS, JavaScript and AJAX.

MG2VACBCA100: INDIAN CONSTITUTION: LEGAL AND ETHICAL PERSPECTIVES FOR IT	
CO1	Understand the fundamental principles of the Indian Constitution.
CO2	Explain the legal framework governing IT and cybersecurity in India, and evaluate the role of e-Governance in promoting transparency and accountability.
C O 3	Analyze the ethical and constitutional implications of emerging technologies.

SEMESTER III

MG3CCRBCA200: QUANTITATIVE TECHNIQUES	
CO1	Describe the fundamental concepts of statistics, including data types, collection methods, and representation techniques, to analyse and interpret data effectively for decision-making in various fields.
CO2	Compute and interpret central tendency and dispersion measures to summarize datasets, assess variability, and make data-driven decisions.
CO3	Evaluate relationships between variables using correlation coefficients, construct regression models for prediction, and interpret the association between correlation and regression.
CO4	Apply fundamental probability concepts to solve real-world problems involving uncertainty and decision-making.

MG3CCRBCA201: DATABASE MANAGEMENT SYSTEMS	
CO1	Analyse the Basic Concept of DBMS.
CO2	Proficiency in Database design and SQL.
CO3	Understand Normalization and Transaction Management.
CO4	Analyse MongoDB Database and Operations.
CO5	Implement SQL query, and administer MongoDB databases.

MG3CCRBCA202: SOFTWARE ENGINEERING	
CO1	Illustrate the software development lifecycle and its application in contemporary software engineering practices.
CO2	Analyse project management methodologies and strategic decision making for successful software project execution.
CO3	Analyse software design, development, and testing processes to produce robust and efficient software solutions.

MG3CCRBCA203: DESIGN AND ANALYSIS OF ALGORITHMS	
CO1	Illustrate basic algorithm designing paradigms and analyse the performance of algorithms.
CO2	Analyse the design approaches- Divide and Conquer and the greedy method and apply them in real-life problems.
CO3	Synthesize algorithms using Dynamic Programming, Backtracking approaches and apply to common real-life problems.

MG3SECBCA200: PYTHON PROGRAMMING	
CO1	Analyse Python programming concepts.
CO2	Apply suitable Python programming constructs, built-in data structures using Python libraries to solve problems.
CO3	Analyse basic Data visualization and File handling in Python.
CO4	Solve problems using Python Programming.

MG3DSEBCA200: BASICS OF DATA ANALYTICS USING SPREADSHEET	
CO1	Understand the basics of data analytics and its applications.
CO2	Develop proficiency in using spreadsheet software for data manipulation and analysis.
CO3	Build and use spreadsheet models for decision making & Communicate data insights effectively.

SEMESTER IV

MG4CCRBCA200: ARTIFICIAL INTELLIGENCE	
CO 1	Describe the characteristics of rational agents and gain insights about problem-solving agents.
CO 2	Analyse Uninformed and informed search techniques.
CO 3	Apply knowledge representation using Propositional logic and Predicate calculus for inference/reasoning and handling uncertainty through probabilistic reasoning and fuzzy sets.
CO4	Illustrate AI domains and their applications and examine the legal and ethical issues of AI.
CO 5	Apply search strategies, solve constraint-based problems, build rule-based systems, evaluate optimization methods, and use basic NLP techniques in intelligent systems.

MG4VACBCA201: IT AND ENVIRONMENTAL SUSTAINABILITY	
CO1	Describe the components of the environment, natural resources, and ecosystems, and explain sustainable practices for their conservation.
CO2	Identify types of pollution and waste, explain sustainable development goals, and summarize key environmental laws and their impact on society and businesses.
CO3	Explain key social issues, environmental laws, and the role of population dynamics in promoting sustainable development.

MG4SECBCA200: OBJECT ORIENTED PROGRAMMING USING JAVA	
C01	Understand the fundamental concepts of object-oriented programming using Java.
CO2	Utilize arrays, String, Vectors, Wrapper Classes and inheritance in Java programming.
C03	Utilize packages, Exceptions and Threads in Java programming.
CO4	Apply basic java Programming concepts, Multithreading Exceptions, and packages for problem solving.
C05	Understand basic GUI and JDBC architecture, and develop Java GUI applications to communicate with databases using JDBC.

MG4SECBCA201: PROBABILITY DISTRIBUTIONS AND STATISTICAL INFERENCE	
CO1	Analyse random variables, probability distributions, and statistical moments to model uncertainty, compute key metrics, and solve practical problems in data science and decision-making.
CO2	Apply key theoretical distributions to model real-world data, compute statistical properties, and solve probability problems—equipping them with essential tools for data analysis and predictive modelling.
CO3	Describe commonly used sampling distributions and their interrelationships.
CO4	Illustrate hypothesis testing, including types of hypotheses and errors, critical concepts like p-value and power, tests based on t, z, and chi-square distributions.

MG4SECBCA202: DESIGN THINKING AND INNOVATION	
CO1	Propose real-time innovative product designs and choose appropriate frameworks, strategies, techniques during prototype development.
CO2	Know wicked problems and how to frame them in a consensus manner that is agreeable to all stakeholders using appropriate frameworks, strategies, techniques during prototype development.
CO3	Analyze emotional experience and inspect emotional expressions to better understand users while designing innovative products.

MG4DSEBCA200: DATA VISUALIZATION	
CO1	Analyze the fundamentals of data visualization and its importance.
CO2	Compare and contrast different types of visualizations and their appropriate uses.
CO3	Use Power BI to create and customize various types of visualizations.

SEMESTER V

CS5CRT12: COMPUTER NETWORKS	
CO1	Students can learn the basics of networking.
CO2	Helps students to learn about different protocols.
CO3	Helps to learn about telephone networks.
CO4	It Enable students to learn about internet protocols and connecting devices.
CO5	To familiarise with network security issues.

CS5CRT13: IT AND ENVIRONMENT	
CO1	Understand key concepts from economic and social analysis
CO2	Appreciate concepts and methods from ecological and physical sciences and their application in environmental problem solving.
CO3	Apply systems concepts and methodologies to analyse and understand interactions between social and IT environmental processes.
CO4	To demonstrate an understanding of professional, ethical, legal, security, and social issues and responsibilities.
CO5	To identify the impact of information technology in society and environment

CS5CRT14: JAVA PROGRAMMING USING LINUX	
CO1	To gain information about features of Java, control statements, data types.
CO2	To frame the students with knowledge of objects and class, methods, final and interface.
CO3	To have some idea about array, packages and exception handling
CO4	To gain the facts about event handling, swing and layout manager.
CO5	To acquire knowledge of applet and JDBC.

SEMESTER VI

CA6CRT04: CLOUD COMPUTING	
CO1	To construct the students with the information about cloud computing.
CO2	To make the students with the facts of virtualization.
CO3	To acquaint students with the knowledge of cloud architecture.
CO4	To obtain the knowledge of cloud application platform and data intensive computing.
CO5	To generate the information about cloud platforms in industry.

CR6CRT15: MOBILE APPLICATION DEVELOPMENT-ANDROID	
CO1	Enable students to build a bright future into the Android market which is on high today.
CO2	Helps students to develop mobile applications
CO3	Enable students to develop games
CO4	Helps students to send and receive SMS
CO5	To familiarise with Google maps

CS6CBT02: DATA MINING	
CO1	Since it is a knowledge discovery process that enables students to extract useful Information from existingdatabases.
CO2	It helps students to learn about different characteristics of Data mining
CO3	Data mining enables the researchers and scholars to keep a check on the health of a particular area.
CO4	Helps to analyse this huge amount of data and extract useful information from it.
CO5	It enables students to discover patterns, forecast trends and find relations

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