

**ILAHIA COLLEGE OF ARTS AND SCIENCE  
PEZHAKKAPPILLY, MUVATTUPUZHA  
COMPUTER SCIENCE DEPARTMENT**

**PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC  
OUTCOME(PSO) AND COURSE OUTCOME(CO)**

## Programme: Bachelor of Computer Applications (BCA)

BCA is a three year undergraduate degree programme for candidates wishing to delve in to the world of computer language. One of the most popular options to get started with a career in information technology, the course gives you an insight in to the world of computers and its applications. The degree helps interested students in setting up a sound academic base for an advanced career in computer applications.

### **Programme Specific Outcomes**

**PS01:**To prepare graduates who will have a successful professional career in software industry,government, academics and other areas where computer applications are deployed.

**PS02:**Develop programming skills, Networking skills, learn applications,packages, Programming languages and modern techniques of IT.

**PS03:** BCA graduates are able to develop and prepare documents,projects,presentations,design websites and demonstrate skills in running software programs.

**PS04:**To be a foundation graduate programmethis will act as a feeder course for higher studies in the area of computer science, Applications, Management etc.

### **Programme Outcome**

**P01:** To attract young minds to the potentially rich and employable field of computer applications.

**P02:** The program prepares the young professionals for a range of computer applications like: database managementsystems , techniques of computer networking, computer languages ,software engineering , web development, software development , computer languages etc.

**P03:** To develop skills in software development so as to enable the graduate to take a self-employment in Indian and Global software market.

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**P04:**To train and equip the students to meet the requirements of the industrial standards

**Course Outcome**

	Title of the course	Course Outcome
<b>Semester I</b>	English -I	Confidentially use English in both written and spoken forms. And also use English for formal communications effectively.
	Mathematics	The student will be able to identify and use set properties and set notations. The student will be able to perform set operations. The student will be able to solve applications involving sets. Learning number theory helps improving one's ability of mathematical thinking.
	Basic statistics	Define a variety of basic statistical terms and concepts. Solve fundamental statistical problems. Use your understanding of statistical fundamentals to interpret data.
	Computer fundamentals and digital principles	Students will be able to understand the basic components and functioning of the computer. Understand various types of network and operating system Understand various types of number system and their conversion Simplify the Boolean expression and apply Boolean theorems through logical gate To study implementation of combinational circuit using gate .
	Methodology of programming and C language	Programming methodology deals with the analyses, design and implementation of programme. Programming methodology is just a programming practice tom help the students to plan and structure more defined way. The primary programming language for coding ODS based applications.
	Software Lab I	The objective of the course is to help the students in finding solutions to various real life. Problems and converting the solution in to computer programme using C language(Structured programming. Students will learn to write programmes for solving various real-life problems.

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Semester 2	English	By the end of the course, the learner should be able to identify major issues of contemporary significance and to respond rationally and positively to the issues raised.
	Discrete Mathematics	This syllabus is specially designed to help the students of computer science to understand the mathematical concepts like matrices and graph theory which have applications in various subjects of computer science.
	DataBase Management System	This course is intended to provide you with an understanding of the current theory and practice of database management systems. To help you more fully appreciate their nature, the course provides a solid technical overview of database management systems, using a current database product as a case study. In addition to technical concerns, more general issues are emphasized
	Computer Organization and Architecture	To learn the machine level representation of data, instructions sets ,computerarithmetic,CPU structure and functions, memory system organization,scheduling system I/O,multiprocessor and digital logic.
	Object oriented programming using C++	The main aim of OOP is to bind data and function together, No other part of the code can access this data except that function.
	Software Lab- II (DBMS and C++)	The major objective of this lab is to provide a strong formal foundation in database concepts and C ++ , technology and practice to the participants to groom them into well-informed database application developers
Semester III	Advanced statistical methods (complementary)	Understand the types of questions that the statistical method addresses. Apply the method to other examples and situations;
	Computer Graphics	Provide comprehensive introduction about graphics system Design algorithms to generate the basic primitives Understand 2d transformations Familiar with techniques of clipping, three dimensional graphics and three dimensionaltransformations. Familiar with animations
	Microprocessor and PC Hardware	Learn about the architecture and Learn about programming of the microprocessor 8085

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		<p>Learn about the basic concepts of Motherboard</p> <p>Learn about the different buses and hard disk.</p> <p>Learn about the basic of different types of memory and memory modules</p>
	Operating Systems	<p>Learn about operating systems, functions of operating systems, system calls.</p> <p>Learn about process coordination and process scheduling algorithms</p> <p>Learn about memory management, critical section and deadlock handling algorithms.</p> <p>Learn about file management and disk scheduling algorithms</p> <p>At the end of the course, students will be able to implement various algorithms required for management, scheduling, allocation and communication used in Operating System.</p>
	Data Structure using C++	<p>To understand different types of data structures and its basic operations. Implement appropriate searching and sorting techniques for a given problem.</p> <p>Ability to describe basic operations and its applications of stack and queue using array</p> <p>Ability to describe basic operations and its applications of linked list</p> <p>To understand operations of Tree and its variations.</p> <p>Ability to understand file and its organization. To understand Hashing and Collision Resolution Technique.</p>
	Software Lab III	<p>To develop skills to design and analyze simple linear and nonlinear data structures To Strengthen the ability to identify and apply the suitable data structure for the given real world problem To Gain knowledge in practical applications of data structures</p>

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Semester IV	Operational research (complementary)	The objective of Operations Research, as a mathematical discipline, is to establish theories and algorithms to model and solve mathematical optimization problems that translate to real life decision making problems.
	Designs and Analysis of Algorithms	The objective of the course is to teach techniques for effective problem solving in computing. The use of different paradigms of problem solving will be used to illustrate clever and efficient ways to solve a given problem. In each case emphasis will be placed on rigorously proving correctness of the algorithm.
	System Analysis & Software Engineering	The objective of this course is to make students familiar with all the software development principles, models and designing tools required to develop the software.
	Linux Administrations	To know the basic concepts of Linux Operating System. Familiar with Linux commands. Understand shell programming Familiar with system administration and Understand various types of servers
	Web Programming using PHP	Web programming refers to the writing ,markup and coding involved in Web Development. PHP is a script language and interpreter that is freely available and used primarily on Linux Web Servers.
	Software Lab IV	To study the Linux programming and Web Programming
Semeste V	Computer Networks	<p>1.Understand computer network basics, network hitecture, TCP/IP and OSI reference models.</p> <p>2. Identify and understand various techniques and modes of nsmission</p> <p>03:Describe data link protocols, multi-channel access otocols and IEEE 802 standards for LAN</p> <p>04: Describe routing and congestion in network layer with ting algorithms and classify IPV4 addressing scheme</p> <p>05: Discuss the elements and protocols of transport layer</p> <p>06: Understand network security and define various protocols h as FTP, HTTP, Telnet, DNS</p>

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	IT and Environment	To learn the role of IT in environmental impact assessment and environment audit.
	Java Programming using Linux	The objective of this course is to let students understand basics of java programming language, development of programs and database connectivity.
	Informatics and Cyber Ethics	Cyber Ethics is the study of ethics pertaining to computers, covering user behaviour and what computers are programmed to do, and how this affects individuals and society.
	Software Lab V	Applet, JDBC connection and swing based Programs
	Software Development Lab I (Mini Project)	Mini project shall be a small complete project, to make the student confident in designing a system based on System Analysis & Design course, using VB and SQL Server/ORACLE.
Semeste VI	Cloud computing	To learn the use of cloud computing and cloud storage, which helps and benefits them to reduce the cost of Data Management , improve productivity and safety and security of data and information.
	Mobile Application Development – Android	To learn to use Android Studio, the integrated development environment (IDE) for Android Apps.
	Data mining	Interpret the contribution of data warehousing and data mining to the decision-support level of organizations, evaluate different models used for OLAP and data preprocessing categorize and carefully differentiate between situations for applying different data-mining techniques: frequent pattern mining, association, correlation, classification, prediction, and cluster and outlier analysis design and implement systems for data mining ,evaluate the performance of different data-mining algorithms propose data-mining solutions for different applications.
	Software Lab VI and Seminars	The student shall choose a modern topic of current day interest in the areas of Computer Science Information Technology and present a seminar using appropriate presentation media such as LCD projector.

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	Software Development Lab II (Main Project )	The project topic shall be chosen from areas of current day interest using latest packages / languages running on appropriate platforms (Except the tools used in software development-I), so that the student can be trained to meet the requirements of the Industry. A project report should be submitted in hard bound complete in all aspects. For internal evaluation, the progress of the student shall be systematically assessed through various stages of evaluation at periodic intervals.
	Viva voce	Scheme of Evaluation of Viva voce (core) for External is as follows: Each student should attend a course viva voce based on syllabus from semester I to semester IV