



# PGP COLLEGE OF ARTS AND SCIENCE

NH-7, Namakkal – Karur Main Road, Namakkal – 637 207

(Affiliated to Periyar University, Salem and Approved by AICTE,

New Delhi, Reaccredited by NAAC and Recognized by UGC with 2(f) & 12(B))



## DEPARTMENT OF COMPUTER APPLICATIONS

### PROGRAMME OUTCOMES OF UG COURSES (2021 ONWARDS)

Name of the Programme: BCA	
<b>PO1</b>	An ability to understand theory of Digital Design and Computer Organization to provide an insight of how basic computer components are specified.
<b>PO2</b>	An ability to understand the functions of various hardware components their building blocks.
<b>PO3</b>	Identify, formulate, review research literature and analyze complex engineering problems reaching sustained conclusion first principles of mathematical, natural sciences and engineering sciences.
<b>PO4</b>	Understand, analyze and develop computer programs in the areas related to algorithm, web design and networking for efficient design of computer based system.
<b>PO5</b>	Work in the IT Sector as system engineer, software tester, junior programmer, web developer, system administrator, software developer etc.
<b>PO6</b>	To learn about some interesting subjects such as computer programming, computer networking, mathematics, software engineering and Database Management Systems.
<b>PO7</b>	The students should be open to learning new skills and attracting opportunities that may uplift their career..
<b>PO8</b>	Ability to Understand how to developing a software and get knowledge of how to handle systems.



## PROGRAMME SPECIFIC OUTCOMES OF UG COURSES (2021 ONWARDS)

Name of the Programme: BCA	
<b>PSO1</b>	Focusing on preparing student for roles pertaining for computer applications and IT industry.
<b>PSO2</b>	Start from the Basics, in every semester gain computer based knowledge for social development.
<b>PSO3</b>	Learn Programming language such as c, c++, java, HTML,SQL,etc.
<b>PSO4</b>	Information about various computer applications and latest development in IT and communication system is also provided.
<b>PSO5</b>	Bachelor in Computer Application (BCA) gives a number of oppoturnities to individuals to go ahead and share in their lives.
<b>PSO6</b>	Ability to develop web content and gather sufficient information by Internet surfing.



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## COURSE OUTCOMES OF UG COURSES (2019 ONWARDS)

Name of the Programme: BCA		
Course Code & Course Title	Course Outcome	
<b>SEMESTER - I</b>		
21UCA01 COMPUTER APPLICATIONS FOR AUTOMATION	CO1	To Compare and contrast various types of computer.
	CO2	Explain the purpose of computer and CPU how it works.
	CO3	To gain practical exposure on spread sheet.
	CO4	To have practical skill on power point presentation.
	CO5	To Educate MS-office System, internet operations, online, offline working areas.
	CO6	Acquire practical knowledge of working with menus of Windows directory.
19UCAP01 PRACTICAL OFFICE AUTOMATION	CO1	To make student familiar with general purpose office automation tools.
	CO2	The students would be able to do office work smoothly with the help of computers.



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	CO3	Details of the four tasks and features that would be covered Using word - Accessing, overview of toolbars, saving files, Using help and resources, rulers, format painter.
	CO4	Hands on experience on various tools of Office like making: Excel Spreadsheets.
	CO5	The students would learn Working onGUI using windows
	CO6	Attain the knowledge about spreadsheetwith formula, spell checker etc.
	CO7	To get Knowledge about overview ofexcel and word and powerpoint etc.
<b>SEMESTER - II</b>		
21UCA02  C PROGRAMMING	CO1	Interpret the basic principles of C programming.
	CO2	Recollect various programming constructs and to develop C programs.
	CO3	Acquire decision making and looping concepts.
	CO4	Choose the right data representation fbrnats based on the requirements ofthe problem.



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	CO5	Explore usage of Arrays, strings, structures, and files.
21UCAP02 PRACTICAL - PROGRAMMING IN C	CO1	Illustrate the concepts of various data and structures.
	CO2	Apply the specification of syntax rules for numerical constants and variables, data types.
	CO3	Usage of Arithmetic operator, conditional operator, logical operator, and relational operator and other C constructs.
	CO4	Write C Programs using decision making, branching, looping constructs.
	CO5	Apply and Write C programs to implement one dimensional and two dimensional arrays.
	CO6	Writing programs using functions.
21UCAS01 INTERNET AND ITS APPLICATIONS	CO1	Explain the basics of the internet and its origin.
	CO2	Describe functioning of the internet.
	CO3	Illustrate how to surf different websites.
	CO4	Demonstrate how to download files.



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	CO5	To get knowledge on how to open an email account.
	CO6	To send and receive emails through an email account and to store and retrieve addresses from the address book.
<b>SEMESTER - III</b>		
21UCA03 FUNDAMENTALS OF DIGITAL COMPUTERS	CO1	Understand binary, hexadecimal and octal number systems and their arithmetic.
	CO2	Bridge the fundamental concepts of computers with the present level of knowledge of the students.
	CO3	Understand how logic circuits and Boolean algebra forms as the basics of digital computer.
	CO4	Demonstrate the building up of sequential and combinational logic from basic gates.
	CO5	Design basic electronic Circuits (combinational circuits).
	CO6	Understand the construction of memory.
21UCA04 STRUCTURED SYSTEM ANALYSIS AND DESIGN	CO1	To understand the principles of the phased approach to software development.
	CO2	How to Apply modelling tools and techniques to the design and analysis of the business problem.
	CO3	Explains the Tools and techniques used in the top-down approach.



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	CO4	Discusses the methods for ensuring quality in design and execution of software development.
	CO5	Role and need of Systems Analyst aualificatios and responsibilities Systems Analyst as an Agent of Change.
	CO6	To understand Systems Design and Modeltns Process Modeling, Logical andphysical Design, Conceptual Data Modeling: Entity/Relationship Analysis, Entity-Relationship modeling, ERDs.
21UCA05 DATA STRUCTURESAND ALGORITIIMS	CO1	Remember the concepts of algorithms for searching, sorting and dynamic programming.
	CO2	Understanding the representations of data and various algorithms.
	CO3	Apply appropriate algorithm and data structures for realtime applications.
	CO4	Analyze the complexity of different algorithms.
	CO5	Implement the operations of linear data structures like stacks, queues and linkedlists.
	CO6	Demonstrate primitive operations on different types of trees and their applications.
<b>SEMESTER - IV</b>		
21UCAP03 PRACTICAL - DATA STRUCTURE USING C	CO1	Students will be able to : Select appropriate data structures as applied to specified problem definition.
	CO2	Implement operations like searching, insertion, and deletion, traversing mechanism etc. on various data structures.
	CO3	Students will be able to implement Linear and Non-Linear data structures.
	CO4	Implement appropriate sorting/searching technique for given problem.
	CO5	Determine and analyze the complexity of given Algorithms.



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	CO6	To get Knowledge about Traversal algorithm and binary tree traversal and know about algorithm.
21UCA06 RELATIONAL DATABASE MANAGEMENT SYSTEMS	CO1	An appreciation of pervasive use of Knowledgebase and DBMS in different application domains.
	CO2	Learning storage and indexing of data.
	CO3	Skills to integrate knowledge to databases.
	CO4	Describe the fundamental elements of relational database management systems.
	CO5	Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.
	CO6	Design ER-models to represent simple database application scenarios.
21UCA07 OPERATING SYSTEMS	CO1	To Understand functions, Role, different structures and views of Operating system.
	CO2	To Understand Process management in operating system.
	CO3	To Understand Memory Management in operating system.
	CO4	Evaluate resource allocation and scheduling algorithms of OS.
	CO5	Design and developing multi-threaded programs using Open MP.





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	CO6	To Understand the services provided by and the design of an operating system.
<b>SEMESTER - V</b>		
21UCA08 OBJECT ORIENTED PROGRAMMING IN C++	CO1	Understand object oriented programming concepts using c++.
	CO2	Remember the characteristics of Procedure and Object Oriented Programming Languages.
	CO3	Apply the concepts of arrays and strings in various problems.
	CO4	Illustrate the process of data file manipulations using c++.
	CO5	Apply virtual and pure virtual function complex programming situations.
	CO6	To be able to program using C++ features such as composition of objects, Operator overloading, inheritance, Polymorphism etc.
21UCAP04 PRACTICAL PROGRAMMING IN C++	CO1	Understand the difference between the top-down and bottom-up approach.
	CO2	Describe the object-oriented programming approach in connection with C++.
	CO3	Apply the concepts of object-oriented programming.
	CO4	Illustrate the process of data file manipulations using C++.
	CO5	Apply virtual and pure virtual function & complex programming situations.
	CO6	To learn how to use exception handling in C++ programs.
	CO7	To learn how inheritance and virtual functions implement dynamic binding with polymorphism.
21UCAS02 HTML AND JAVASCRIPT	CO1	To familiarize students with the coding process including syntax, best practices, and the idea of "code once, re-use many times".
	CO2	To Learn the syntax and semantics of HTML.



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	CO3	To be able to create a site independently publish and export your site Work with master pages and pages.
	CO4	Create effective scripts using JavaScript and jquery to enhance the end user experience.
	CO5	Demonstrate knowledge of introductory programming concepts.
	CO6	Test, debug, and debug web pages containing java script and jQuery.
21UCA09 WEB TECHNOLOGIES	CO1	Students are able to develop a dynamic webpage by the use of java script and DHTML.
	CO2	Students will be able to write a well formed/valid XML document.
	CO3	Students will be able to connect a java program to a DBMS and perform insert, update and delete operations on DBMS table.
	CO4	To Learn about the HTTP communication protocol, the markup languages HTML, XHTML, and XML.
	CO5	Create applications by using the concepts like JSP and Servlets.
	CO6	Students will gain the skills and project based experience needed for entry into web application and development careers.
<b>SEMESTER - VI</b>		
21UCA10 PROBLEM SOLVING TECHNIQUES	CO1	Inculcate and apply various skills in problem solving.
	CO2	Choose most appropriate programming constructs and features to solve the problems in diversified domains.
	CO3	Exhibit the programming skills for the problem those require the writing of well documented programs including use of the logical constructs of language, Communicate methods of solutions and solutions to problems for the clarity of the receiver



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	CO4	Demonstrate significant experience with the python program development environment and Solve program using algorithms or formulas.
	CO5	Identify needed information and/or eliminate extraneous information towards solving contextual problems. Recognize proportional relationships from verbal, graphical, symbolic or numerical scenarios. Solve problems involving percents, proportions, and unit conversions. Clearly convey the solutions to problems Use mathematical results to guide decision-making.
	CO6	Use proportionality to solve and analyze a variety of multi-step contextual problems.
21UCA11 JAVA PROGRAMMING	CO1	students will be able to apply object oriented programming features and for solving given problem.
	CO2	students will be able to use java standard API library to write complex programs.
	CO3	knowledge object oriented paradigm in the java programming language.
	CO4	summarizes the strengths and weakness of the java programming and the basic concept of object-oriented programming language.
	CO5	understand the principles of inheritance, packages and interfaces.
	CO6	students to develop interactive programs using applets and swlgs.
21UCAE03 COMPUTER GRAPHICS	CO1	Understand the basics of computer graphics, different graphics systems and applications of computer graphics.
	CO2	Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.



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	CO3	Use of geometric transformations on graphics objects and their application in composite form.
	CO4	Extract scene with different clipping methods and its transformation to graphics display device.
	CO5	Explore projections and visible surface detection techniques for display of 3D scene on 2D screen.
	CO6	Render projected objects to naturalize the scene in 2D view and use of illumination models for this.
21UCAP05 PRACTICAL - PROGRAMMING IN JAVA	CO1	Use an integrated development environment to write, compile, run, and test simple object-oriented java programs.
	CO2	Students to Read and make elementary modifications to Java programs that solve real-world problems.
	CO3	Write Java programs to implement error handling techniques using exception handling.
	CO4	Identify and fix defects and common security issues in code.
	CO5	Document a Java program using Javadoc.
	CO6	Use a version control system to track a source code in a project.
21UCAP01	CO1	Use the workspace menu to change and use built-in workspace, explore photoshop help, and use it to find out more about the tools in the toolbox.



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PRACTICAL - IMAGE EDITING TOOL	CO2	Manipulate and customize palettes.
	CO3	How can You Edit Photos Online?
	CO4	Open and navigate a photoshop document with menu commands, the zoom and Hand tool, and the navigator palette.
	CO5	Create a layered photoshop document from a starting image (provided). Use Undo commands and the history lette to reverse document changes.
	CO6	Print a Photoshop document by configuring the Frrrop print dialog box. Save a copy of the print-quality document for fast online transmission.
	21UCAS04 MULTI SKILL DEVELOPMENT	CO1
CO2		Students will understand the main aim of communication.
CO3		Effectively communicate through verbal/oral communication and improve the listening skills.
CO4		Students will be able to find, use, and evaluate primary academic writing associated with the communication discipline.
CO5		Actively participate in group discussion / meetings / interviews and prepare & deliver presentations.
CO6		Function effectively in multi-disciplinary and heterogeneous teams through the knowledge of team work, Inter-personal relationships, conflict management and leadership quality.
21UCA12 GUI PROGRAMMING	CO1	Develop programs using classes and object-oriented programming, Document their classes.
	CO2	Describe different ways of creating GUIs.
	CO3	Use standard controls and data controls.



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	CO4	Use Java AWT and Swing classes to build GUIs.
	CO5	Acquire the knowledge of visual basic.
	CO6	It includes basic programming concepts, problem solving, programming logic, and the design of event-driven programming.
	CO7	Bring out the knowledge of functions and procedures of control structures.
21UCA13 COMPUTER NETWORKS	CO1	Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
	CO2	Decide routing entries given a simple example of network topology.
	CO3	As a student in Computer Networking (BSCN) you will gain valuable skills in computer networks (switching, routing), system and network administration, computer and network security, operating systems, web programming, databases, and project management.
	CO4	Communicate effectively in a variety of professional contexts.
	CO5	Describe how computer networks are organized with the concept of layered approach.
	CO6	Demonstrate the principles of application layer protocols.
21UCAE06 MULTIMEDIA	CO1	Students will understand the hardware and software needed to create projects using creativity and organization to create them.
	CO2	To understand how Multimedia can be incorporated.
	CO3	Apply methodology to develop a multimedia system.
	CO4	The objective of this subject is to teach the principles of how different types of media can be processed and presented by computers.





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	CO5	To learn the basics and Fundamentals of Multimedia and introduce Multimedia components and Tools.
	CO6	Students will learn ways to present their multimedia projects.
21UCAE09 MOBILE COMPUTING	CO1	To provide guidelines, design principles and experience in developing applications for small, mobile devices, including an appreciation of context and location aware services.
	CO2	Utilize mobile computing nomenclature to describe and analyze existng mobile computing frameworks and architectures.
	CO3	To appreciate the social and ethical issues of mobile computing , including privacy.
	CO4	To introduce wireless communication and networking principles, that support connectivity to cellular networks, wirelessz internet and sensor devices
	CO5	Evaluate the effectiveness of different mobile computing frameworks.
	CO6	This course will cover the nomenclature and implementation of mobile computing and mobile communication.
21UCAP06 PRACTICAL - PROGRAMMINGIN VB	CO1	Understand the concept of data-driven program execution flow control in visual basic programming.
	CO2	Understand the concepts of Visual Basic.
	CO3	Demonstrate knowledge of programming terminology and how applied using Visual Basic.
	CO4	Develop and debug applications using Visual Basic 2010 that runs under Windows operating system.



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	CO5	Apply the Knowledge of database methods.
	CO6	Develop programs that retrieve input from a file as opposed to input only provided by user.
21UCASP02 PRACTICAL ANDROID PROGRAMMING	CO1	Android Application Development course is designed to quickly get you up to speed with writing apps for Android devices.
	CO2	Develop various Android applications related to layouts & rich uses interactive interfaces.
	CO3	The student will learn the basics of Android platform and get to understand the application lifecycle.
	CO4	Develop Android applications related to mobile related server-less database like SQLITE.
	CO5	Student will be able to write simple GUI applications, use built-in widgets and components, work with the database to store data locally, and much more.
	CO6	Apply essential Android Programming concepts.
19UCAS06 SHELL PROGRAMMING	CO1	Ability to write Shell Programming using Linux commands.
	CO2	To understand the some basic utilities of UNIX File.
	CO3	To compare UNIX shell and popular shell , To learn the basic components in constructing a Shell Script (program).
	CO4	Shell Scripts A shell script is just a file containing shell commands, but with a few extras.
	CO5	Ability to design and write application to manipulate internal kernel level Linux File System.
	CO6	Ability to use various Linux commands that are used to manipulate system operations at admin level and a prerequisite to pursue job as a work administrator.





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	CO7	To get knowledge created for command sequences in which a user has a need to use repeatedly in order to save time.
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