TECNIA INSTITUTE OF ADVANCED STUDIES
NAAC Accredited Grade 'A' Institute
Department of Computer Applications
BCA Ref. No.
TIAS/BCA/2021-22/

Paper Code	Paper	Course Objectives	Course Outcomes
BCA 103	Programming using 'C' Language	To be able to build own logic for a given problem.	Student will be able to Understand of computer programming language concepts of C character set, Identifiers and keywords, Data types and Operators.
		To be able to develop own programs by using C Language.	Students will be able to implement the algorithms and draw flowcharts for solving Mathematical and Engineering problems.
		To understand the use of Syntax of C Programming Language.	Students will be able to understand design and develop Computer programs, analyzes, and interprets the concept of pointers, declarations, initialization, operations on pointers and their usage.
		To understand the semantics of C programming language.	Students will be able to understand ,design & develop Semantics of C Programming Lanugae
BCA 105#	Fundamentals of Computers & IT	Discuss the evolution of computers in different generations	Students will able describe computer fundamental, Input output devices and emerging technology.
		Classify computers in different categories based on their capabilities.	Students will able design flowcharts, block diagrams and hands-on experience on office automation.
		Describe the major components of computers and information technology applications:Hardware, software, data, processes, computer networks and people.	Students will able to apply different Number systems and Boolean algebra for digital representation in a computer system.

		Demonstrate an understanding of the importance of algorithms in the development of IT applications.	Students will able to classify and compare various types of networks network standards and communication software
BCA 107#	Web Technologies	Design simple web pages using markup languages like HTML and XHTML.	Students will be able to write a well formed / valid XML document
		Create dynamic web pages using DHTML and java script that is easy to navigate and use	Build dynamic web pages using JavaScript (Client side programming)
		Understand various web services and how these web services interact	Students will be able to write a server side java application called JSP to catch form data sent from client and store it on database
		Develop real time application using server side programming and Web Services	Able to contrast server side scripting and Server side programming and develop database connectivity by make use of java and PHP.
BCA 104	Web Based Programming	To understand the structure of the Internet and the Web.	To learn HTML tags and JavaScript Language programming concepts and techniques
		To understand the TCP/IP protocol and understand its use in the web	To develop the ability to logically plan and develop web pages
		To explore server-side JavaScript programming	To learn to write, test, and debug web pages using HTML and JavaScript.
		To learn the client/server model.	Students will be able to write a server side java application called JSP to catch form data sent from client and store it on databas
BCA 106	Data Structure and Algorithms Using' C'	Understand the use and working of the various data structures.	Student will be able to Understanding the use of basic data structures.
		Learn to be able to build own algorithms and pseudocodes for the various applications of the basic data structures.	Student will be able to demonstrate algorithms and its correctness.

		To develop skills to apply appropriate data structures in problem solving	Student will be able to design/develop different methods for traversing trees
		To understand concepts about searching and sorting techniques	Student will be able to execute searching and sorting techniques on data.
BCA 108#	Database Management system	To understand difference between storing data in FMS and DBMS and advantages of DBMS.	Illustrate the concept of Database Management Systemand Describe the E R model.
		To understand conceptual and physical design of a database.	Create query optimization plan using query pre-processing and optimization, SQL and PL/SQL
		To understand RDBMS and queries to design database and manipulate data in it.	Apply Relational Algebra, Relational Calculus , Dependency , Functional Decomposition and normalization process for problem solution.
		To know basic database backup and recovery.	Describe the concept of Transaction Processing and elaborate Concurrency control and Failure Recovery.
BCA 201	Computer Network	student will able to Enumerate the layers of the OSI model and TCP/IP	Describe the general principles of data communication.
		Student will be able to Familiarize with the basic taxonomy and terminology of the computer networking area	Describe how computer networks are organized with the concept of layered approach.
		Student will be able to analyse performance of various communication protocols.	Describe how signals are used to transfer data between nodes.
		Student will be able to apply mathematical foundations to solve computational problems in computer networking.	Describe how packets in the Internet are delivered.
BCA 203	Computer Organization and Architecture	1) To learn the design of Control Unit of a typical computer.	CO1:Student will able to Describe the operations and language of the register transfer, micro operations and input-output organization.

		2) To learn the design of ALU of a typical computer.	CO2:Student will able to Demonstrate the working of central processing unit and RISC and CISC architecture and pipelining.
		3) To learn the concepts of pipelining and vector processing.	CO3:Student will able to Elaborate advanced concepts of computer architecture and Analyse the design issues in terms of speed, technology, cost and performance.
		4) To learn about the memory, input –output organization of a typical computer.	CO4: Student will able to Classify and Compare various types of primary and secondary memories available for a computer system.
BCA 205#	Object Oriented Programming using C++	1) To gain knowledge of objects, Class, Data Abstraction, Encapsulation, Inheritance, Polymorphism and Dynamic Binding.	CO1: Articulate the principles of object-oriented problem solving and outline the essential features and elements of C++ programming language.
		2) To know about constructing programs using Bottom-up design approach.	CO2: Develop program using the concept of classes and objects.
		3) To be capable of designing a system based on programming language C++.	CO3: Demonstrate proficiency in polymorphism and inheritance and its techniques.
		4) Introduction to generic programming templates, template functions, Overloading of template functions	CO4: Develop programs using concepts of generic programming, explain concepts of files and exception handling.
BCA 202	Java Programming	1) To get the Knowledge about different Object Oriented Features.	CO1: Define object oriented programming concepts and implement in java.
		2) To make students well versed with programming in java.	CO2: Identify exception handling methods and Implement multithreading in object oriented programs.
		3) To understand and use Applet and Swing.	CO3: Develop the Graphical User Interface using Swings, Applets, Interface and Package.

		4)To understand how to use Java APIs for program development.	CO4: Design and develop web based application using java Servletsand describeconnection with database using Java Database Connectivity
BCA 204	Software Engineering	1) To gain knowledge of various software models.	CO1: The student will get the knowledge about Software Crisis, Software Processes & Characteristics, Software life cycle models, Waterfall, Prototype, Evolutionary and Spiral Models.
		2) To gain knowledge of various software design activities.	CO2: The student will be able to calculate Size Estimation like lines of Code & Function Count, Cost Estimation Models, COCOMO Models
		3) To learn cost estimation, software testing, Maintenance and debugging.	CO3: The student will understand Cohesion & Coupling, Classification of Cohesiveness & Coupling, Layered arrangement of modules, Function Oriented Design Concep
		4) To get the knowledge of software re engineering	CO4: The student will be able to calculate test cases and perform different types of testing