

KOVAI KALAIMAGAL COLLEGE OF ARTS AND SCIENCE

An Autonomous Institute, Affiliated to Bharathiar University, Coimbatore.

Re-Accredited with 'A' Grade by NAAC

Narasipuram, Coimbatore -641109

DEPARTMENT OF COMPUTER APPLICATIONS

PROGRAMME OUTCOMES (PO) OF BCA

For the Students Admitted in the Academic year 2020-2021.

Programme Outcomes

After completion of three years of study, our BCA Graduates will be able to :

- PO1. Communication Skills:** Communicate effectively and present technical information lucidly in oral and written reports.
- PO2. In-Depth Domain Knowledge:** Acquire adequate knowledge in specified programming so as to build up capabilities of working programs for solving complex problems.
- PO3. Technical Skills:** Develop an ability to select modern computing tools & techniques appropriate to the context & use them with dexterity.
- PO4. Knowledge Inter-Disciplinary In Nature:** Acquire adequate knowledge in inter -Disciplinary subjects such as commerce, mathematics & statistics so as to make use of them for understanding complex concepts.
- PO5. Positive Attitude:** Designing programmes to develop the self confidence & hence to make the students to think & act positively.
- PO6. Critical Thinking And Problem Solving Skills:** Create and design innovative methodologies to solve complex problems for the betterment of the society.
- PO7. Dynamism And Team Building Skills-**Function effectively both as a team leader and team member on multi disciplinary projects to demonstrate computing and management skills.
- PO8. Professional Ethics And Social Values:** Developing ability to execute a fast with professional ethics without sacrificing the concern for social welfare and environmental protection.
- PO9. Self-Awareness And Emotional Intelligence:** Make the students understand their own strengths and weakness & be emotionally balanced at times of crisis.
- PO10. Entrepreneurship Qualities:** Apply the skill acquired to become successful entrepreneurs.
- PO11. Thirst For Knowledge Through Life Long Learning:** Motivating the students to have a linking for learning so as to be upto date in the recent developments & hence to make them life long learners.

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COURSE OUTCOMES (CO) OF BACHELOR WITH COMPUTER APPLICATIONS

For the Students Admitted in the
Academic year 2020-2021.

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	20U1CACT01	Title: Core1: C Programming	Batch	2020-2023
Hrs/week	5 Hrs		Semester	1
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To know about problem solving techniques and algorithm fundamentals and basics of C Programming.
- To clearly understand decision making and branching concepts with various statements.
- To know about the concept of arrays, strings and functions with its various operations.
- To learn about the concept of structure, pointers
- To acquire the knowledge of file management.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the basic concepts of Problem solving and algorithms
CO2	Explain the loops and decision making statements to solve the problem
CO3	Apply different operations on arrays
CO4	Use functions to solve the given problem
CO5	Discuss about file system and operations on files

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	20U1CACT02	Core 2: Digital Fundamentals And Computer Architecture	Batch	2020-2023
Hrs/week	5 Hrs		Semester	1
			Credits	4

COURSE OBJECTIVE

On Completion Of This Course,

- To Understand the various numbering System & Conversion problems
- To enhance the Knowledge of basic Logic circuits.
- To Learn about sequential circuit
- To Understand various data transfer techniques in digital computer.
- To gain the concepts of memory organization

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Review various Numbering System & Conversion problems
CO2	Design basic circuit for Gates
CO3	Understand the concepts of sequential circuit.
CO4	Illustrate the basic input-output organization of computer, Asynchronous data transfer
CO5	Illustrate the Concepts of memory organization.

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	20U1CACP03	Title : Core 3 : C Programming - Practical	Batch	2020-2023
Hrs/week	4 Hrs		Semester	1
			Credits	3

COURSE OBJECTIVES

- To enhance the students to learn field of C programming language with various techniques for enhance their analysis and problem solving techniques.
- To learn basic principles of objects, arrays and pointers for efficient implemenataion in real world problems.
- To gain skills to handle strings.
- To gain the knowledge of file operations.
-

COURSE OUTCOMES (CO)

On successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Understand the basic structure of C programming for declaring and usage of variables.
CO2	Find the solution for given problem by using time and memory complexity.
CO3	Solve the given problem by using the loop and decision making statements
CO4	Implementation of various file operations for a given application

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Application	
Course Code :	20U1CAAT01	Allied 1:Numerical Methods and Statistics	Batch	2020-2023
Hrs/week	5		Semester	1
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To understand the different Methods of solving numerical, algebraic and Transcendental Equations .
- To find derivatives of various formulae and Integration using numerical differentiation and integrate various functions using numerical integration.
- To have a knowledge of finding numerical solutions of ordinary differential Equations.
- To learn how to calculate various statistical constants. To gain knowledge about Correlation and Regression

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Find Numerical Solution of Algebraic and Transcended Equations.
CO2	Solve Simultaneous Linear Algebraic Equations by using different methods.
CO3	Explain the methods of Numerical Differentiation, Integration of various functions and finding Numerical Solution of Ordinary Differential Equation using different methods.
CO4	Calculate the Statistical Constants.
CO5	Explain the concepts of Correlation and Regression and their applications in practical situations

SEMESTER I

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	20U2CACT04	Core 4: C++ Programming	Batch:	2020-2023
Hrs/week:	5 Hrs		Semester:	2
			Credits:	4

COURSE OBJECTIVES

To provide knowledge on Object-Oriented Programming Concepts using C++.

- To learn the concepts of classes and objects.
- • To learn about the concepts of operator overloading and Inheritance.
- • To understand the basic concepts of pointers and functions.
- • To enhance the students knowledge in the concepts of File Handling

COURSE OUTCOMES (CO)

CO Number	CO Statement
CO1	Explain the fundamental concepts of OOPS languages and control structures.
CO2	Elucidate on classes, functions and constructor.
CO3	Give in detail about types of inheritance and solving problems using the same.
CO4	Explain about Arrays and Pointers and their Functions.
CO5	Demonstrate on File Handling Mechanism.

SEMESTER II

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	20U2CACT05	Core 5: Data Structures	Batch	2020-2023
Hrs/week:	5 Hrs		Semester	2
			Credits	4

COURSE OBJECTIVES:

- To study about the design and implementation of the data structure and how the data are manipulated in order to develop an application and also helps the students in understanding the use of data structure in the real world.
- To make the students to understand the basic concepts of Data Structures and Algorithms.
- To understand the abstract data types stack, queue, dequeue, and list.
- To understand the performance of the implementations of basic linear data structures.
- To understand prefix, infix, and postfix expression formats..

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Recall information for writing Algorithms in solving problems.
CO2	Choose appropriate data structure as applied to specify problem definition.
CO3	Apply problem solving skills & provide a foundation for advanced programming courses using an object-oriented programming methodology.
CO4	Use linear & Non linear Data structures like stacks, Queues, Linked list etc., and show operations like searching, insertion, deletion, traversing mechanism etc.on various data structures.
CO5	Illustrate how to store and retrieve data stored in both main memory and in secondary memory.

SEMESTER II

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	20U2CACP06	Core 6: C++ Programming - Practical	Batch	2020-2023
Hrs/week:	4 Hrs		Semester	2
			Credits	3

COURSE OBJECTIVES

To enable the students to gain knowledge in developing C++ Programs for certain specified problems.

- To develop the applications using C++ Programming language.
- To apply the concepts like looping, control statements arrays, function overloading and file concepts.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Write programs in C++ to demonstrate Classes and objects
CO2	Use various types of arrays and constructors
CO3	Apply the concepts of virtual functions and function overloading
CO4	Write programs in C++ using special functions, constructor and destructor.
CO5	Use the file handling concepts

SEMESTER II

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	20U2CAAT02	Title : Allied 2:Discrete Mathematics	Batch	2020-2023
Hrs/week	5 Hrs		Semester	2
			Credits	4

COURSE OBJECTIVES

- To enable the Students
- To understand the concept of set theory, Logic and Relations
- To learn the concept of languages and Grammars
- To know the concept of Graph theory and its applications

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of set theory, partition of sets, inclusion and exclusion principles.
CO2	Write an argument using logical notation and determine if the argument is valid or invalid.
CO3	Describe the binary relations between two sets and determine if the relation is partial order relation or equivalence relation using set operations.
CO4	Explain the concepts of formal languages and construct the finite state automata.
CO5	State the concept of graphs, enumerate the types of graphs and their applications practical situations.

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	20U3CACT07	CORE 7: OPERATING SYSTEMS	Batch	2020-2023
Hrs/week	5 Hrs		Semester	3
			Credits	4

Course Objectives:

- To gain knowledge on OS concepts and functioning of modern OS.
- To understand the structure of OS , process and Inter process Communications
- To understand the deadlock & Memory management concepts

COURSE OUTCOMES (CO)

On successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Define the concepts of operating systems and security
CO2	Explain operating system structure, process and threads
CO3	Illustrate Inter process Communication and scheduling
CO4	Describe deadlock and deadlock prevention
CO5	Explain memory management, file systems and directories

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	20U3CACT08	Core 8: Java Programming	Batch	2020-2023
Hrs/week	5 Hrs		Semester	3
			Credits	4

COURSE OBJECTIVES

- To understand fundamentals of object – oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.
- To be able to use the Java SDK environment to create, debug and run simple Java programs.
- To understand the Java Programming concepts so as to enable the students of Applications and Applets using Java

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the basic concepts of Object oriented programming
CO2	Explain the loops and decision making statements to solve the problem
CO3	Describe the concepts of threads and string
CO4	Discuss about the Applet programming
CO5	Apply about the different operations on files

SEMESTER – III

Programme Code :	BCA	Programme Title Core 9: Data Communications and Networks	Bachelor of Computer Applications	
Course Code :	20U3CACT09		Batch	2020-2023
Hrs/week	6 Hrs		Semester	3
			Credits	4

COURSE OBJECTIVES:

- To comprehend the use of different types of transmission media and network devices.
- To understand the concepts of flow control, error control and LAN protocols.
- To understand the functions performed by Network Management System.

COURSE OUTCOMES (CO)

On successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Define the various concepts of Network models
CO2	Explain the basics of physical layer and data transmission
CO3	Explain the data link layer controls
CO4	Use communication primitives in the network layer
CO5	Examine the transport layer and application layer

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	20U3CACP10	Core 10: Java Programming-Practical	Batch	2020-2023
Hrs/week	6 Hrs		Semester	III
			Credits	3

COURSE OBJECTIVES:

- To enhance the students to learn field of java programming language with various techniques for enhance their analysis and problem solving techniques
- To learn basic principles of threads, applets and files for efficient implementation in real world problems.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Understand the basic structure of java programming for declaring and usage of variables.
CO2	Choose the loop and decision making statements to solve given problem
CO3	Design the program using applets
CO4	Implementation of various file operations for a given application

SEMESTER III

Programme Code :	B.C.A.	Programme Title	Bachelor of Computer Application	
Course Code :	20U3CAAT03	Title : Allied 3: Operations Research	Batch	2020-2023
Hrs/week	5		Semester	III
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To Know Operation Research and LPP, solving LPP
- To solve transportation and assignment problems
- To acquire knowledge of queueing theory, PERT and CPM

CO Number	CO Statement
CO1	Define Operations Research, Linear Programming Problem and explain the methods of solving Solution of LPP using Graphical Method simplex method and Big M method
CO2	Solve Transportation and Assignment problems
CO3	Explain the concepts of Game Theory
CO4	Study the concepts of Queueing theory and solving simple problems
CO5	Know distinction between PERT & CPM

SEMESTER IV

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	20U4CACT11	Core11: WEB DESIGNING	Batch	2020-2023
Hrs/week	5 Hrs		Semester	IV
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To get practiced with creating the schemas and XML Document.
- To acquire knowledge on creating web page to deploy the web applications.
- To understand scripting language in java & VB.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the basic concepts of Internet technologies
CO2	Explain the style sheets and its common tasks
CO3	Define the features of XML and compatibility
CO4	Define XML structures, tags and their elements
CO5	Define the concepts of java script and operators, objects, events

SEMESTER IV

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	20U4CACT12	Core 12. Systems Analysis and Design	Batch	2020-2023
Hrs/week	5		Semester	IV
			Credits	3

COURSE OBJECTIVES

To enable the students

- To gather data to analyse and specify the requirements of a system.
- To design system components and environments..
- To build general and detailed models that assist programmers in implementing a system. .
- To design a database for storing data and a user interface for data input and output, as well as controls to protect the system and its data.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Understand the principles and tools of systems analysis and design
CO2	Solve a wide range of problems related to the analysis, design and construction of information systems
CO3	Apply Project Management and Requirement analysis,Principles to S/W project development.
CO4	Analyze the cost estimate and problem complexity using various Analyze estimation techniques
CO5	Plan and undertake a major individual project, prepare and deliver coherent and structured verbal and written technical reports

SEMESTER IV

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	20U4CACT13	Core 13: Computer Graphics and Multimedia	Batch	2020-2023
Hrs/week	5		Semester	IV
			Credits	3

COURSE OBJECTIVES:

To provide knowledge to the students on the basic concepts of computer graphics.

- To appreciate the importance of technical ability and creativity within design practice.
- To become familiar with Blender Graphics, Photoshop editing, CorelDraw.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of output primitives, Outline of the graphics system.
CO2	Understand different types of Multimedia File Format, Technologies and Standards
CO3	Design Basic 3d Scenes using Blender
CO4	Apply tools for designing visiting cards, letterheads, envelope design, greetings designs invitation cards etc.
CO5	To analyze different aspects of letter format and graphics

SEMESTER IV

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	20U4CACP14	Title: CORE 14 : WEB DESIGNING PRACTICAL	Batch	2020-2023
Hrs/week:	6 Hrs		Semester	4
			Credits	3

COURSE OBJECTIVES:

- To enhance the students to learn field of web designing programming language with various techniques for enhance their web page developing techniques.
- To learn basic concepts of html, css and xml.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student should be able to

CO Number	Statement
CO1	Illustrate web page development and designing with use of html
CO2	Use Event Handling Functions
CO3	Apply the concept of java script in html
CO4	Apply the basic concept of XML
CO5	Develop a website.

SEMESTER – IV

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	20U4CAAT04	Allied 4:Business Accounting	Batch	2020-2023
			Semester	V
Hrs/week	5		Credits	3

COURSE OBJECTIVES:

- To make the students understand the basic accounting concept and conventions.
- To enlighten the students on the importance of cost ascertainment reduction and control.
- To enable the students to understand the preparation of budgets in the business organizations.

COURSE OUTCOMES (CO)

On the successful completion of the course, students will be able to achieve the following Outcomes

CO Number	Statement
CO1	Explain the basic accounting principles and the procedure to prepare journal and ledger
CO2	Prepare a Final accounts of Sole Trading concern.
CO3	Prepare a cost sheet with adjustments
CO4	Explain the concept of financial accounting and cost accounting.
CO5	Prepare a cash budget and sales budget

SEMESTER – V

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	20U5CACT15	Core 15. ASP.Net and C#	Batch	2020-2023
Hrs/week	5		Semester	V
			Credits	4

COURSE OBJECTIVES

To enable the students

- To learn about the basic concepts of ASP .NET.
- To learn about the ASP .NET object model and its architecture.
- To learn about the C# and its functions.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand about ASP.Net environment and its applications.
CO2	Know about the various forms in Visual Basic and Session controls.
CO3	Write various applications using C# Language in the .NET Framework.
CO4	Develop distributed applications using .NET Framework.
CO5	Create various applications using C#.Net framework

SEMESTER-V

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	20U5CACT16	Core 16: Relational Database Management System	Batch	2020-2023
Hrs/week:	5 Hrs		Semester	V
			Credits	4

COURSE OBJECTIVES:

On Completion of this Course

- To understand the concepts of RDBMS.
- To have knowledge on DBMS & RDBMS.
- To enhance their on SQL, DDL, DML, DCL Statements, Select, group by and having clause. String and set operations, Aggregate Functions, Nested Sub Queries.
- Enables student to write PL/SQL programs that use: procedure, function, package, cursor and trigger

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Describe the fundamental elements of relational database management systems
CO2	Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.
CO3	Use SQL query structure and modify the table
CO4	Declare and enforce integrity constraints on a database using a state-of-the-art RDBMS.
CO5	Demonstrate programming PL/SQL including procedures, stored functions, cursors, packages.

SEMESTER V

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	20U5CACP17	Core 17 : ASP .NET AND C# - PRACTICAL	Batch	2020-2023
Hrs/week	6		Semester	V
			Credits	4

COURSE OBJECTIVES

To enable the students to gain knowledge about the teaching methodologies useful for the implementation and console based application and web based application.

COURSE OUTCOMES (CO)

At the end of the practical session, students would be well-versed in

CO Number	CO Statement
CO1	Design, create, build, and debug arithmetic operations for displaying numeric output using .NET applications.
CO2	Developing a console application in ASP .NET.
CO3	Compute different operations using looping statements.
CO4	Developing applications using C#

SEMESTER V

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	20U5CACP18	CORE 18 : RELATIONAL DATABASE MANAGEMENT SYSTEM PRACTICAL	Batch	2020-2023
Hrs/week:	6 Hrs		Semester	V
			Credits	3

COURSE OBJECTIVES:

To enable the students

- To the Implementation of RDBMS commands such as DDL, DML, and DCL.
- To know the learners in SQL,PL/SQL programming based on concept learned with program course.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student should be able to

CO Number	Statement
CO1	Identify the operators, basic commands, built-in functions in SQL
CO2	Implement RDBMS concept in developing simple applications using PL/SQL

SEMESTER –VI

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	20U6CACT19	Core 19: Fundamentals of Python Programming	Batch	2020-2023
Hrs/week	5 Hours		Semester	VI
			Credits	5

COURSE OBJECTIVES

- To understand the fundamentals of Python Programming.
- To understand and practice embedded dynamic scripting on client side Internet Programming.
- To understand and practice web development techniques on client-side.

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COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Exposed to Python syntax and semantics and be fluent in the use Python flow control and functions.
CO2	Create and run Python Programs using Lists, Dictionaries and handle File Systems.
CO3	Explain the concepts of Regular Expressions and Object-Oriented programming as used in Python.
CO4	Build Data Structures using Python.
CO5	Create programming projects from scratch using in-demand skill and technologies

EMESTER-V

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	20U6CACT20	Title: Core 20: Mobile Application Development	Batch	2020-2023
Hrs/week:	6 Hrs		Semester	V
			Credits	4

Course Objectives

To enable the students

- Describe the Android SDK features and the Development Framework and understanding Activities.
- Create adaptive, responsive user interfaces that work across a wide range of devices.
- Perform background work and long-running tasks in Android applications
- Know the concepts of Storing, sharing and retrieving data in Android applications

Course Outcomes (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Comprehend the basic features of Android Platform and Create Activities in Android.
CO2	Demonstrate the design concepts of user interface using components, views and menus in Android.
CO3	Create and use databases for Android Application
CO4	Learn how permissions, security and performance affect application.
CO5	Deploy mobile applications in various marketplaces for distribution.

SEMESTER-V

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	20U6CACP21	Core 21: Python Practical	Batch	2020-2023
Hrs/week:	6 Hrs		Semester	V
			Credits	3

COURSE OBJECTIVES

- To write, test, and debug simple Python programs.
- To develop the applications using Python programming language.

COURSE OUTCOMES:

At the end of the practical session, students should be well-versed in

CO Number	CO Statement
CO1	Develop proficiency in creating applications, testing and debugging of code written in Python using the Python Programming Language.
CO2	Understand the various data structures available in Python programming language and apply them in solving computational problems.
CO3	Perform text filtering with regular expressions in Python
CO4	Draw various kinds of plots using PyLab

SEMESTER- VI

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	20U6CACP22	CORE 22: PROJECT VIVA-VOCE	Batch	2020-2023
			Semester	VI
Hrs/week	6		Credits	4

Course Objective:

To enable the students to apply practically in a specific area using any specific domain knowledge he/she possesses and get the results.

SEMESTER – V

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	20U5CAET1A	Elective 1: Software Engineering	Batch	2020-2023
Hrs/week	4		Semester	V
			Credits	3

COURSE OBJECTIVES:

To enable the students

- To provide knowledge on Software engineering concepts
- To understand various techniques of cost estimation of software, software design and software Requirements.
- To understand various issues in implementation of software, verification, validation and maintenance of software to give a roadmap to design a new software project.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the various models of software development life cycle
CO2	Explain the software requirement analysis and cost Estimation
CO3	Understand the software design techniques
CO4	Apply verification and validation tools
CO5	Use software testing methods

SEMESTER-V

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	20U5CAET1B	ELECTIVE 1: DATA MINING AND WAREHOUSING	Batch	2020-2023
Hrs/week	4		Semester	V
			Credits	3

COURSE OBJECTIVES

To enable the students

- To know the basics of data mining and warehousing.
- To Understand various techniques in data mining.
- To learn about architecture of data warehouse and its applications

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	To present survey on different learning, classification and data mining foundations.
CO2	To and methods for data Mining applications.
CO3	To solve problems for multi-core or distributed, concurrent/Parallel environments.
CO4	To survey and use latest trends and advances in datamining and warehousing.

SEMESTER – V

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	20U5CAET1C	ELECTIVE 1: E-COMMERCE	Batch	2020-2023
			Semester	V
Hrs/week	4		Credits	3

COURSE OBJECTIVES

To enable students

- To have knowledge on concepts of e-Commerce.
- To enhance the knowledge in business strategy and inter organisational transactions.
- To understand the concepts of E-Markets, Electronic Data Interchange and E-Business.

COURSE OUTCOMES

On the successful completion of the course, students will be able to achieve the following Outcomes

CO Number	CO Statement
CO1	Understand the basic concepts and technologies used in the field of E-Commerce
CO2	Understand the knowledge of Business Strategy
CO3	Understand the processes of developing and implementing information systems
CO4	To know about the ethical, social, and security issues of information systems
CO5	Examine the concept of E- Wallet operations.

SEMESTER – V

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	20U5CAET2A	ELECTIVE 2: Embedded Systems	Batch	2020-2023
Hrs/week	4		Semester	V
			Credits	3

COURSE OBJECTIVES:

- To make the students to have basic Knowledge and understanding of fundamental embedded systems design paradigms, architectures, possibilities and challenges, both with respect to software and hardware
- Ability to analyze a system both as a whole and in parts and their interaction in the functionality and properties of the system.
- To make the students to have a clear understanding on industrial embedded systems and intelligent embedded system development.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of embedded systems and memory organization
CO2	Explain devices and communication concepts
CO3	Apply embedded programming in High Level Languages
CO4	Explain inter process communication
CO5	Explain real time operating systems

SEMESTER – V

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	20U5CAET2B	ELECTIVE 2: Client Server Technology	Batch	2020-2023
Hrs/week	4		Semester	V
			Credits	3

COURSE OBJECTIVES:

- To understand the concepts of client/server
- To learn the components of client and server application
- To learn the components of client and server application-Connectivity
- To learn the components of client and server application-Software & Hardware
-

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of client/server computing
CO2	Use the components of client/server applications
CO3	Discuss about client/server connectivity
CO4	Explain the client/server application software
CO5	Explain the client/server application hardware

SEMESTER – V

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	20U5CAET2C	ELECTIVE 2: Web Technology And Its Applications	Batch	2020-2023
Hrs/week:	4 Hrs		Semester	V
			Credits	3

COURSE OBJECTIVES

To enable the students

- To learn about the basic concepts of various networking model and its layers.
- To learn about the concepts of protocol and its architecture.
- To learn about the Java Scripts and XML.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Define the fundamental ideas and standards underlying OSI Model.
CO2	Differentiate the major frameworks allowing to develop TCP/IP and UDP and assess their suitability for specific usage scenarios.
CO3	Explain the link between the concepts of services and business processes and discuss and critique related standards.
CO4	Define the fundamental of scripting languages.
CO5	Describe about how to write a well formed / valid XML document

SEMESTER-VI

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	20U6CAET3A	Elective 3 : Artificial Intelligence and Expert System	Batch	2020-2023
Hrs/week	4		Semester	VI
			Credits	3

COURSE OBJECTIVES

To enable the students

To Understand different planning problems and have the basic knowledge how to design and implement AI planning systems

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand the strengths and limitations of various state-space search algorithms and choose the appropriate algorithms for a problem
CO2	Learn the basics of the theory and practice of Artificial Intelligence as a discipline about intelligent agents capable of deciding what to do, and do it
CO3	Apply knowledge representation techniques and problem solving strategies to common AI applications
CO4	Design simple software to experiment with various AI concepts and analyze Results
CO5	Build self-learning and research skills to be able to tackle a topic of interest on his/her own or as part of a team

SEMESTER – VI

Programme code:	BCA	Programme Title	Bachelor of Computer Application	
Course Code:	20U6CAET3B	ELECTIVE :3 MOBILE COMPUTING	Batch:	Course Code:
			Semester:	VI
Hrs/Week:	4 Hrs		Credits:	3

COURSE OBJECTIVES

Enable the students

- To introduce the mobile communication fundamentals.
- To enable the students to know about GSM and GPRS Technologies.
- To make the students learn and understand 3G, 4G and 5G Technologies.

COURSE OUTCOMES

On the successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Explain the fundamentals of mobile computing.
CO2	Describe Mobile Computing through Telephony.
CO3	Enumerate the Emerging Technologies with GSM.
CO4	Elucidate on GPRS and WAP Technologies.
CO5	Determine CDMA and 3G Concepts and Implementation.

SEMESTER-VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	20U6CAET3C	Elective 3 : Cloud Computing	Batch	2020-2023
Hrs/Week	4 Hrs		Semester	VI
			Credits	3

COURSE OBJECTIVES

To enable the students

- To Understand the Cloud computing architectures, applications and challenges and learn about various cloud storages

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand security implications in cloud computing
CO2	Analyse the trade-offs inherent in Cloud Computing
CO3	Identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud, etc.
CO4	Explain the core issues of cloud computing such as security, privacy, and interoperability
CO5	Identify problems, and explain, analyze, and evaluate various cloud computing solutions

SEMESTER – VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	20U6CAET4A	ELECTIVE 4: COMPILER DESIGN	Batch	2020-2023
Hrs/Week:	4 Hrs		Semester	VI
			Credits	3

COURSE OBJECTIVES

To enable the students

- To learn the fundamentals of Compiler Designs and knowledge on High level Programming languages.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand the basics of compilation(computing)
CO2	Understand grammar of compilers
CO3	Understand the intermediate form of codes in compilers
CO4	Understand the code generation technique(Machine code)
CO5	Understand the optimization of code in compilers

SEMESTER – VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	20U6CAET4B	ELECTIVE 4: MOBILE OPERATING SYSTEM	Batch	2020-2023
Hrs/Week:	4 Hrs		Semester	VI
			Credits	3

COURSE OBJECTIVES

To enable the students

- To understand the process of developing software for the mobile and create mobile applications on the Android Platform

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand the limitations and challenges of working in a mobile and wireless environment.
CO2	Describe and apply the different types of application models/architectures used to develop mobile software applications.
CO3	Describe the components and structure of a mobile development frameworks (Android SDK and Eclipse Android Development Tools)
CO4	To learn how and when to apply the different components to develop a working system
CO5	Design, implement and deploy mobile applications using an appropriate software development environment.

SEMESTER VI

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	20U6CAET4C	Elective 4: PHP & MySQL	Batch	2020-2023
Hrs/week	4 hrs		Semester	VI
			Credits	3

COURSE OBJECTIVES

- Develops skills to create server-side scripts using PHP. Introduces server-side programming concepts and terminology. Explores a variety of server-side techniques and MySQL database manipulation.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Describe and use the features and syntax of programming language PHP
CO2	Create, translate, and process HTML information using the Common Gateway Information (CGI) protocol.
CO3	Apply PHP code to produce outcomes and solve problems.
CO4	Display and insert data using PHP and MySQL. Retrieve, insert, update, and delete data from the relational database MySQL
CO5	Test, debug, and deploy web pages containing PHP and MySQL.

KOVAI KALAIMAGAL COLLEGE OF ARTS AND SCIENCE

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COURSE OUTCOMES (CO) OF BACHELOR WITH COMPUTER APPLICATIONS

For the Students Admitted in the Academic year 2019-2020.

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U1CACT01	Title: Core1: C Programming	Batch	2019-2022
Hrs/week	5 Hrs		Semester	I
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To know about problem solving techniques and algorithm fundamentals and basics of C Programming.
- To clearly understand decision making and branching concepts with various statements.
- To know about the concept of arrays, strings and functions with its various operations.
- To learn about the concept of structure, pointers and file management.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the basic concepts of Problem solving and algorithms
CO2	Explain the loops and decision making statements to solve the problem
CO3	Apply different operations on arrays
CO4	Use functions to solve the given problem
CO5	Discuss about file system and operations on files

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U1CACT02	Core 2: Digital Fundamentals And Computer Architecture	Batch	2019-2022
Hrs/week	5 Hrs		Semester	I
			Credits	4

COURSE OBJECTIVE

On Completion Of This Course,

- The Student Can Understand The Design Of Combinational And Sequential Digital Logic
- Circuits Students Also Have Knowledge On Programmable Logic Device and CPU.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Review various Numbering System & Conversion problems
CO2	Design basic circuit for Gates
CO3	Apply Boolean laws & rules to specify simple Expressions
CO4	Identify & Illustrate basic input-output organization of computer
CO5	Illustrate the Memory Concepts,I/O Device & Pheripherals

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U1CACP03	Title : Core 3 : C Programming - Practical	Batch	2019-2022
Hrs/week	4 Hrs		Semester	1
			Credits	3

COURSE OBJECTIVES

- To enhance the students to learn field of C programming language with various techniques for enhance their analysis and problem solving techniques.
- To learn basic principles of objects, arrays and pointers for efficient implemenataion in real world problems.

COURSE OUTCOMES (CO)

On successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Understand the basic structure of C programming for declaring and usage of variables.
CO2	Design an solution for given problem using time and memory complexity.
CO3	Choose the loop and decision making statements to solve given problem
CO4	Implementation of various file operations for a given application

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Application	
Course Code :	19U1CAAT01	Allied 1:Numerical Methods and Statistics	Batch	2019-2022
Hrs/week	5		Semester	I
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To understand the different Methods of solving numerical, algebraic and Transcendental Equations .
- To find derivatives of various formulae and Integration using numerical differentiation and integrate various functions using numerical integration.
- To have a knowledge of finding numerical solutions of ordinary differential Equations.
- To learn how to calculate various statistical constants.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Find Numerical Solution of Algebraic and Transcended Equations.
CO2	Solve Simultaneous Linear Algebraic Equations by using different methods.
CO3	Explain the methods of Numerical Differentiation, Integration of various functions and finding Numerical Solution of Ordinary Differential Equation using different methods.
CO4	Calculate the Statistical Constants.
CO5	Explain the concepts of Correlation and Regression and their applications in practical situations

SEMESTER I

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	19U2CACT04	Core 4: C++ Programming	Batch:	2019-2022
Hrs/week:	5 Hrs		Semester:	II
			Credits:	4

COURSE OBJECTIVES

On Completion Of This Course

- To provide knowledge on Object-Oriented Programming Concepts using C++.
- To learn about the concepts like Abstraction, Encapsulation, Inheritance, and Polymorphism.
- To enhance the students knowledge in writing C++ Programs and the concepts of File Handling

COURSE OUTCOMES (CO)

CO Number	CO Statement
CO1	Explain the fundamental concepts of OOPS languages and control structures.
CO2	Elucidate on classes, functions and constructor.
CO3	Give in detail about types of inheritance and solving problems using the same.
CO4	Explain about Arrays and Pointers and their Functions.
CO5	Demonstrate on File Handling Mechanism.

SEMESTER II

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	19U2CACT05	Core 5: Data Structures	Batch	2019-2022
Hrs/week:	5 Hrs		Semester	II
			Credits	4

COURSE OBJECTIVES:

- To enhance the students to understand the basic concepts of Data Structures and Algorithm, concepts of Stack, Queue and Linked List, Searching, Sorting, Trees, Graphs and File Operations.
- To demonstrate about writing algorithms and reframe step by step approach in solving problems with the help of fundamental data structures.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Recall information for writing Algorithms in solving problems.
CO2	Choose appropriate data structure as applied to specify problem definition.
CO3	Apply problem solving skills & provide a foundation for advanced programming courses using an object-oriented programming methodology.
CO4	Use linear & Non linear Data structures like stacks, Queues, Linked list etc., and show operations like searching, insertion, deletion, traversing mechanism etc.on various data structures.
CO5	Illustrate how to store and retrieve data stored in both main memory and in secondary memory.

SEMESTER II

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	19U2CACP06	Core 6: Data Structures and C++ Programming - Practical	Batch	2019-2022
Hrs/week:	4 Hrs		Semester	II
			Credits	3

COURSE OBJECTIVES

- To enhance the students to learn field of Data Structure and C++ programming language with various techniques for enhance their analysis and problem solving techniques.
- To learn basic principles of Object Oriented Programming and implementation in real world problems.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Illustrate looping & Decision Making Statements to solve the problems in C++
CO2	Explain about compilation and debug programs in C++ Language using functions and files.

SEMESTER II

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U2CAAT02	Title : Allied 2:Discrete Mathematics	Batch	2019-2022
Hrs/week	5 Hrs		Semester	II
			Credits	4

COURSE OBJECTIVES

- To enable the Students
- To understand the concept of set theory, Logic and Relations
- To learn the concept of languages and Grammars
- To know the concept of Graph theory and its applications

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of set theory, partition of sets, inclusion and exclusion principles.
CO2	Write an argument using logical notation and determine if the argument is valid or invalid.
CO3	Describe the binary relations between two sets and determine if the relation is partial order relation or equivalence relation using set operations.
CO4	Explain the concepts of formal languages and construct the finite state automata.
CO5	State the concept of graphs, enumerate the types of graphs and their applications practical situations.

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U3CACT07	CORE 7: OPERATING SYSTEMS	Batch	2019-2022
Hrs/week	5 Hrs		Semester	III
			Credits	4

Course Objectives:

- To gain knowledge on OS concepts and functioning of modern OS.
- To understand the structure of OS
- To acquire the knowledge of process and Inter process Communications
- To understand the deadlock
- To enhance the knowledge of Memory management and files.

COURSE OUTCOMES (CO)

On successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Define the concepts of operating systems and security
CO2	Explain operating system structure, process and threads
CO3	Illustrate Inter process Communication and scheduling
CO4	Describe deadlock and deadlock prevention
CO5	Explain memory management, file systems and directories

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U3CACT08	Core 8: Java Programming	Batch	2019-2022
Hrs/week	5 Hrs		Semester	III
			Credits	4

COURSE OBJECTIVES

- To understand fundamentals of object – oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.
- To be able to use the Java SDK environment to create, debug and run simple Java programs.
- To understand the Java Programming concepts so as to enable the students of Applications and Applets using Java

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the basic concepts of Object oriented programming
CO2	Explain the loops and decision making statements to solve the problem
CO3	Describe the concepts of threads and string
CO4	Discuss about the Applet programming
CO5	Apply about the different operations on files

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U3CACT09	Core 9: Data Communications and Networks	Batch	2019-2022
			Semester	III
Hrs/week	6 Hrs		Credits	4

COURSE OBJECTIVES:

- To comprehend the use of different types of transmission media and network devices.
- To understand the concepts of flow control, error control and LAN protocols.
- To understand the functions performed by Network Management System.

COURSE OUTCOMES (CO)

On successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Define the various concepts of Network models
CO2	Explain the basics of physical layer and data transmission
CO3	Explain the data link layer controls
CO4	Use communication primitives in the network layer
CO5	Examine the transport layer and application layer

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U3CACP10	Core 10: Java Programming-Practical	Batch	2019-2022
Hrs/week	6 Hrs		Semester	III
			Credits	3

COURSE OBJECTIVES:

- To enhance the students to learn field of java programming language with various techniques for enhance their analysis and problem solving techniques
- To learn basic principles of threads, applets and files for efficient implementation in real world problems.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Understand the basic structure of java programming for declaring and usage of variables.
CO2	Choose the loop and decision making statements to solve given problem
CO3	Design the program using applets
CO4	Implementation of various file operations for a given application

SEMESTER III

Programme Code :	B.C.A.	Programme Title	Bachelor of Computer Application	
Course Code :	19U3CAAT03	Title : Allied 3: Operations Research	Batch	2019-2022
Hrs/week	5		Semester	III
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To Know Operation Research and LPP, solving LPP
- To solve transportation and assignment problems
- To acquire knowledge of queueing theory, PERT and CPM

CO Number	CO Statement
CO1	Define Operations Research, Linear Programming Problem and explain the methods of solving Solution of LPP using Graphical Method simplex method and Big M method
CO2	Solve Transportation and Assignment problems
CO3	Explain the concepts of Game Theory
CO4	Study the concepts of Queueing theory and solving simple problems
CO5	Know distinction between PERT & CPM

SEMESTER IV

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U4CACT11	Core11: WEB DESIGNING	Batch	2019-2022
Hrs/week	5 Hrs		Semester	IV
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To get practiced with creating the schemas and XML Document.
- To acquire knowledge on creating web page to deploy the web applications.
- To understand scripting language in java & VB.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the basic concepts of Internet technologies
CO2	Explain the style sheets and its common tasks
CO3	Define the features of XML and compatibility
CO4	Define XML structures, tags and their elements
CO5	Define the concepts of java script and operators, objects, events

SEMESTER IV

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U4CACT12	Core 12. Systems Analysis and Design	Batch	2019-2022
Hrs/week	6		Semester	IV
			Credits	4

COURSE OBJECTIVES

To enable the students

- To gather data to analyse and specify the requirements of a system.
- To design system components and environments..
- To build general and detailed models that assist programmers in implementing a system. .
- To design a database for storing data and a user interface for data input and output, as well as controls to protect the system and its data.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Understand the principles and tools of systems analysis and design
CO2	Solve a wide range of problems related to the analysis, design and construction of information systems
CO3	Apply Project Management and Requirement analysis,Principles to S/W project development.
CO4	Analyze the cost estimate and problem complexity using various Analyze estimation techniques
CO5	Plan and undertake a major individual project, prepare and deliver coherent and structured verbal and written technical reports

SEMESTER IV

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	19U4CACT13	CORE 13: E-COMMERCE	Batch	2019-2022
Hrs/Week:	5 Hrs		Semester	IV
			Credits	3

COURSE OBJECTIVES

To enable students

- To have knowledge on concepts of e-Commerce.
- To enhance the knowledge in business strategy and inter organisational transactions.
- To understand the concepts of E-Markets, Electronic Data Interchange and E-Business.

COURSE OUTCOMES

On the successful completion of the course, students should be able to achieve the following Outcomes

CO Number	CO Statement
CO1	Understand the basic concepts and technologies used in the field of E-Commerce
CO2	Understand the knowledge of Business Strategy
CO3	Understand the processes of developing and implementing information systems
CO4	To know about the ethical, social, and security issues of information systems
CO5.	Examine the concept of E- Wallet operations

SEMESTER IV

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	19U4CACP14	Title: CORE 14 : WEB DESIGNING PRACTICAL	Batch	2019-2022
Hrs/week:	6 Hrs		Semester	IV
			Credits	3

COURSE OBJECTIVES:

- To enhance the students to learn field of web designing programming language with various techniques for enhance their web page developing techniques.
- To learn basic concepts of html, css and xml.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student should be able to

CO Number	Statement
CO1	Illustrate web page development and designing with use of html
CO2	Use Event Handling Functions
CO3	Apply the basic concept of xml
CO4	Use the css concepts in html
CO5	Implement the dtd in html

SEMESTER – IV

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U4CAAT04	Allied 4:Business Accounting	Batch	2019-2022
Hrs/week	5		Semester	V
			Credits	3

COURSE OBJECTIVES:

- To make the students understand the basic accounting concept and conventions.
- To enlighten the students on the importance of cost ascertainment reduction and control.
- To enable the students to understand the preparation of budgets in the business organizations.

COURSE OUTCOMES (CO)

On the successful completion of the course, students will be able to achieve the following Outcomes

CO Number	Statement
CO1	Explain the basic accounting principles and the procedure to prepare journal and ledger
CO2	Prepare a Final accounts of Sole Trading concern.
CO3	Prepare a cost sheet with adjustments
CO4	Explain the concept of financial accounting and cost accounting.
CO5	Prepare a cash budget and sales budget

SEMESTER – V

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U5CACT15	Core 15. ASP.Net and C#	Batch	2019-2022
Hrs/week	5		Semester	V
			Credits	4

COURSE OBJECTIVES

To enable the students

- To learn about the basic concepts of ASP .NET.
- To learn about the ASP .NET object model and its architecture.
- To learn about the C# and its functions.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand about ASP.Net environment and its applications.
CO2	Know about the various forms in Visual Basic and Session controls.
CO3	Write various applications using C# Language in the .NET Framework.
CO4	Develop distributed applications using .NET Framework.
CO5	Create various applications using C#.Net framework

SEMESTER-V

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	19U5CACT16	Core 16: Relational Database Management System	Batch	2019-2022
Hrs/week:	5 Hrs		Semester	V
			Credits	3

COURSE OBJECTIVES:

On Completion of this Course

- To understand the concepts of RDBMS.
- To have knowledge on DBMS & RDBMS.
- To enhance their on SQL, DDL, DML, DCL Statements, Select, group by and having clause String and set operations, Aggregate Functions, Nested Sub Queries.
- To develop the skills of Embedded and Dynamic SQL.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concept of Database and Database Design
CO2	Use the Commands and understand table
CO3	Use SQL query structure and modify the table
CO4	Describe about function, grouping and PL/SQL
CO5	Define the concept of Embedded SQL and PL/SQL

SEMESTER V

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U5CACP17	Core 17 : ASP .NET AND C# - PRACTICAL	Batch	2019-2022
Hrs/week	6		Semester	V
			Credits	3

COURSE OBJECTIVES

To enable the students to gain knowledge about the teaching methodologies useful for the implementation and console based application and web based application.

COURSE OUTCOMES (CO)

At the end of the practical session, students would be well-versed in

CO Number	CO Statement
CO1	Design, create, build, and debug arithmetic operations for displaying numeric output using .NET applications.
CO2	Developing a console application in ASP .NET.
CO3	Compute different operations using looping statements.
CO4	Developing applications using C#

SEMESTER V

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U5CACP18	Title : CORE 18 : WEB TECHNOLOGY PRACTICAL	Batch	2018 – 2021
Hrs/week			6 Hours	Semester
			Credits	3

COURSE OBJECTIVES:

- To enhance the students to learn field of web technology programming with various techniques for enhance their software development techniques.
- To learn basic concepts of VB.Net, XML and Java Scripting language.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Illustrate the basic operations in software with use of VB.Net
CO2	Use the basic concept of VB.Net, XML and Java Scripting language
CO3	Apply the concept of java script in html
CO4	Apply the concept of xml

SEMESTER VI

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	19U6CACT19	Core 19:SOFTWARE TESTING	Batch	2019-2022
Hrs/week	5		Semester	VI
			Credits	3

COURSE OBJECTIVES

- To make the students to understand Software Testing principles.
- To discuss the distinctions between types of testing.
- To understand the essential characteristics of tool used for test automation.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	List a range of different software testing techniques and strategies and be able to apply specific (automated) unit testing method to the projects.
CO2	Distinguish characteristics of structural testing methods
CO3	Demonstrate the integration testing which aims to uncover interaction and compatibility problems as early as possible
CO4	Discuss about the functional and system testing methods.
CO5	Demonstrate various issues for object oriented testing with planning, Management, Execution and Reporting.

SEMESTER – VI

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications
Course Code :	19U6CACP20	Core 20: Software Testing- Practical	Batch 2019-2022
Hrs/week	5		Semester VI
			Credits 3

COURSE OBJECTIVES:

- To understand software test automation problems and solutions.
- To learn how to planning a test project, design test cases and data, conduct testing operations, manage software problems and defects, generate a testing report.
- To gain the techniques and skills on how to use modern software testing tools to support software testing projects.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student should be able to

CO Number	CO Statement
CO1	Find practical solutions to the problems.
CO2	Solve specific problems alone or in teams manage a project from beginning to end
CO3	Define, formulate and analyze a problem
CO4	Developing applications and Test them
CO5	Find practical solutions to the problems.

SEMESTER -V

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	19U6CACP21	CORE 21 : PHP AND MY SQL - PRACTICAL	Batch	2019-2022
Hrs/week	6		Semester	VI
			Credits	3

Course Objective: To enable the students to gain knowledge in developing PHP and MySQL Programs for certain specified problems.

Course Outcomes (CO)

At the end of the practical session, students would be well-versed in

CO Number	CO Statement
CO1	Write PHP code to produce outcomes and solve problems.
CO2	Display and insert data using PHP and MySQL.
CO3	Test, debug, and deploy web pages containing PHP and MySQL.

SEMESTER- VI

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	19U6CACP22	CORE 22: PROJECT VIVA-VOCE	Batch	2019-2022
Hrs/week	6		Semester	VI
			Credits	4

Course Objective:

To enable the students to apply practically in a specific area using any specific domain knowledge he/she possesses and get the results.

SEMESTER – V

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	19U5CAET1A	Elective 1: Software Engineering	Batch	2019-2022
Hrs/week	4		Semester	V
			Credits	3

COURSE OBJECTIVES:

To enable the students

- To provide knowledge on Software engineering concepts
- To understand various techniques of cost estimation of software, software design and software Requirements.
- To understand various issues in implementation of software, verification, validation and maintenance of software to give a roadmap to design a new software project.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the various models of software development life cycle
CO2	Explain the software requirement analysis and cost Estimation
CO3	Understand the software design techniques
CO4	Apply verification and validation tools
CO5	Use software testing methods

SEMESTER-V

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	19U5CAET1B	ELECTIVE 1: DATA MINING AND WAREHOUSING	Batch	2019-2022
Hrs/week	4		Semester	V
			Credits	3

COURSE OBJECTIVES

To enable the students

- To know the basics of data mining and warehousing.
- To Understand various techniques in data mining.
- To learn about architecture of data warehouse and its applications

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	To present survey on different learning, classification and data mining foundations.
CO2	To and methods for data Mining applications.
CO3	To solve problems for multi-core or distributed, concurrent/Parallel environments.
CO4	To survey and use latest trends and advances in datamining and warehousing.

SEMESTER – V

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	19U5CAET1C	Elective 1: Computer Graphics	Batch	2019-2022
Hrs/week	4		Semester	V
			Credits	3

Course Objectives:

- To provide knowledge to the students on the basic concepts of computer graphics.
- To gain knowledge 2D and 3D display methods.
- To learn the concepts of multimedia hardware and software.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of output primitives
CO2	Outline of the graphics system
CO3	Explain 2D geometric transformations
CO4	Explain 3D geometric transformations
CO5	Discuss about surface rendering methods

SEMESTER – V

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	19U5CAET2A	ELECTIVE 2: Embedded Systems	Batch	2019-2022
Hrs/week	4		Semester	V
			Credits	3

COURSE OBJECTIVES:

- To make the students to have basic Knowledge and understanding of fundamental embedded systems design paradigms, architectures, possibilities and challenges, both with respect to software and hardware
- Ability to analyze a system both as a whole and in parts and their interaction in the functionality and properties of the system.
- To make the students to have a clear understanding on industrial embedded systems and intelligent embedded system development.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of embedded systems and memory organization
CO2	Explain devices and communication concepts
CO3	Apply embedded programming in High Level Languages
CO4	Explain inter process communication
CO5	Explain real time operating systems

SEMESTER – V

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	19U5CAET2B	ELECTIVE 2: Client Server Technology	Batch	2019-2022
Hrs/week	4		Semester	V
			Credits	3

COURSE OBJECTIVES:

- To understand the concepts of client/server
- To learn the components of client and server application
- To learn the components of client and server application-Connectivity
- To learn the components of client and server application-Software & Hardware
-

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of client/server computing
CO2	Use the components of client/server applications
CO3	Discuss about client/server connectivity
CO4	Explain the client/server application software
CO5	Explain the client/server application hardware

SEMESTER – V

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	19U5CAET2C	ELECTIVE 2: Web Technology And Its Applications	Batch	2019-2022
Hrs/week:	4 Hrs		Semester	V
			Credits	3

COURSE OBJECTIVES

To enable the students

- To learn about the basic concepts of various networking model and its layers.
- To learn about the concepts of protocol and its architecture.
- To learn about the Java Scripts and XML.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Define the fundamental ideas and standards underlying OSI Model.
CO2	Differentiate the major frameworks allowing to develop TCP/IP and UDP and assess their suitability for specific usage scenarios.
CO3	Explain the link between the concepts of services and business processes and discuss and critique related standards.
CO4	Define the fundamental of scripting languages.
CO5	Describe about how to write a well formed / valid XML document

SEMESTER-VI

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	19U6CAET3A	Elective 3 : Artificial Intelligence and Expert System	Batch	2019-2022
Hrs/week	4		Semester	VI
			Credits	3

COURSE OBJECTIVES

To enable the students

- To Understand different planning problems and have the basic knowledge how to design and implement AI planning systems
- Understand the strengths and limitations of various state-space search algorithms and choose the appropriate algorithms for a problem.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Explain the strengths and limitations of various state-space search algorithms and choose the appropriate algorithms for a problem
CO2	Learn the basics of the theory and practice of Artificial Intelligence as a discipline about intelligent agents capable of deciding what to do, and do it
CO3	Apply knowledge representation techniques and problem solving strategies to common AI applications
CO4	Design simple software to experiment with various AI concepts and analyze Results
CO5	Build self-learning and research skills to be able to tackle a topic of interest on his/her own or as part of a team

SEMESTER – VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	19U6CAET3B	Elective 3: MOBILE COMPUTING	Batch	2019-2022
Hrs/week:	4 Hrs		Semester	VI
			Credits	3

COURSE OBJECTIVES

To enable the students

- To introduce the mobile communication fundamentals.
- To enable the students to know about GSM and GPRS Technologies.
- To make the students learn and understand 3G, 4G and 5G Technologies.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Explain the fundamentals of mobile computing.
CO2	Describe Mobile Computing through Telephony.
CO3	Enumerate the Emerging Technologies with GSM.
CO4	Elucidate on GPRS and WAP Technologies.
CO5	Determine CDMA and 3G Concepts and Implementation.

SEMESTER-VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	19U6CAET3C	Elective 3 : Cloud Computing	Batch	2019-2022
Hrs/Week	4 Hrs		Semester	VI
			Credits	3

COURSE OBJECTIVES

To enable the students

- To Understand the Cloud computing architectures, applications and challenges and learn about various cloud storages

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand security implications in cloud computing
CO2	Analyse the Cloud Computing Architecture and Models
CO3	Identify the cloud data center and visualization technologies.
CO4	Analyse the visualization technology and security issues of cloud Computing
CO5	Evaluate various advanced cloud computing platforms

SEMESTER – VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	19U6CAET4A	ELECTIVE 4: COMPILER DESIGN	Batch	2019-2022
			Semester	VI
Hrs/Week:	4 Hrs		Credits	3

COURSE OBJECTIVES

To enable the students

- To learn the fundamentals of Compiler Designs and knowledge on High level Programming languages.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand the basics of compilation(computing)
CO2	Understand grammar of compilers
CO3	Understand the intermediate form of codes in compilers
CO4	Understand the code generation technique(Machine code)
CO5	Understand the optimization of code in compilers

SEMESTER – VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	19U6CAET4B	ELECTIVE 4: MOBILE OPERATING SYSTEM	Batch	2019-2022
Hrs/Week:	4 Hrs		Semester	VI
			Credits	3

COURSE OBJECTIVES

To enable the students

- To understand the process of developing software for the mobile and create mobile applications on the Android Platform

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand the limitations and challenges of working in a mobile and wireless environment.
CO2	Describe and apply the different types of application models/architectures used to develop mobile software applications.
CO3	Describe the components and structure of a mobile development frameworks (Android SDK and Eclipse Android Development Tools
CO4	To learn how and when to apply the different components to develop a working system
CO5	Design, implement and deploy mobile applications using an appropriate software development environment.

SEMESTER VI

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	19U6CAET4C	Elective 4: PHP & MySQL	Batch	2019-2022
Hrs/week	4 hrs		Semester	VI
			Credits	3

COURSE OBJECTIVES

Develops skills to create server-side scripts using PHP. Introduces server-side programming concepts and terminology. Explores a variety of server-side techniques and MySQL database manipulation.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Describe and use the features and syntax of programming language PHP
CO2	Create, translate, and process HTML information using the Common Gateway Information (CGI) protocol.
CO3	Apply PHP code to produce outcomes and solve problems.
CO4	Display and insert data using PHP and MySQL. Retrieve, insert, update, and delete data from the relational database MySQL
CO5	Test, debug, and deploy web pages containing PHP and MySQL.

KOVAI KALAIMAGAL COLLEGE OF ARTS AND SCIENCE

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COURSE OUTCOMES (CO) OF BACHELOR WITH COMPUTER APPLICATIONS

For the Students Admitted in the Academic year 2018-2019.

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U1CACT01	Title: Core1: C Programming	Batch	2018-2021
Hrs/week	5 Hrs		Semester	1
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To know about problem solving techniques and algorithm fundamentals and basics of C Programming.
- To clearly understand decision making and branching concepts with various statements.
- To know about the concept of arrays, strings and functions with its various operations.
- To learn about the concept of structure, pointers and file management.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the basic concepts of Problem solving and algorithms
CO2	Explain the loops and decision making statements to solve the problem
CO3	Apply different operations on arrays
CO4	Use functions to solve the given problem
CO5	Discuss about file system and operations on files

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U1CACT02	Core 2: Digital Fundamentals And Computer Architecture	Batch	2018-2021
Hrs/week	5 Hrs		Semester	1
			Credits	4

COURSE OBJECTIVE

On Completion Of This Course,

- The Student Can Understand The Design Of Combinational And Sequential Digital Logic
- Circuits Students Also Have Knowledge On Programmable Logic Device and CPU.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Review various Numbering System & Conversion problems
CO2	Design basic circuit for Gates
CO3	Apply Boolean laws & rules to specify simple Expressions
CO4	Identify & Illustrate basic input-output organization of computer
CO5	Illustrate the Memory Concepts,I/O Device & Pheripherals

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U1CACP03	Title : Core 3 : C Programming - Practical	Batch	2018-2021
Hrs/week	4 Hrs		Semester	1
			Credits	3

COURSE OBJECTIVES

- To enhance the students to learn field of C programming language with various techniques for enhance their analysis and problem solving techniques.
- To learn basic principles of objects, arrays and pointers for efficient implemenataion in real world problems.

COURSE OUTCOMES (CO)

On successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Understand the basic structure of C programming for declaring and usage of variables.
CO2	Design an solution for given problem using time and memory complexity.
CO3	Choose the loop and decision making statements to solve given problem
CO4	Implementation of various file operations for a given application

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Application	
Course Code :	18U1CAAT01	Allied 1:Numerical Methods and Statistics	Batch	2018-2021
Hrs/week	5		Semester	1
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To understand the different Methods of solving numerical, algebraic and Transcendental Equations .
- To find derivatives of various formulae and Integration using numerical differentiation and integrate various functions using numerical integration.
- To have a knowledge of finding numerical solutions of ordinary differential Equations.
- To learn how to calculate various statistical constants.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Find Numerical Solution of Algebraic and Transcended Equations.
CO2	Solve Simultaneous Linear Algebraic Equations by using different methods.
CO3	Explain the methods of Numerical Differentiation, Integration of various functions and finding Numerical Solution of Ordinary Differential Equation using different methods.
CO4	Calculate the Statistical Constants.
CO5	Explain the concepts of Correlation and Regression and their applications in practical situations

SEMESTER I

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U2CACT04	Core 4: C++ Programming	Batch:	2018-2021
Hrs/week:	5 Hrs		Semester:	2
			Credits:	4

COURSE OBJECTIVES

On Completion Of This Course

- To provide knowledge on Object-Oriented Programming Concepts using C++.
- To learn about the concepts like Abstraction, Encapsulation, Inheritance, and Polymorphism.
- To enhance the students knowledge in writing C++ Programs and the concepts of File Handling

COURSE OUTCOMES (CO)

CO Number	CO Statement
CO1	Explain the fundamental concepts of OOPS languages and control structures.
CO2	Elucidate on classes, functions and constructor.
CO3	Give in detail about types of inheritance and solving problems using the same.
CO4	Explain about Arrays and Pointers and their Functions.
CO5	Demonstrate on File Handling Mechanism.

SEMESTER II

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U2CACT05	Core 5: Data Structures	Batch	2018-2021
Hrs/week:	5 Hrs		Semester	2
			Credits	4

COURSE OBJECTIVES:

- To enhance the students to understand the basic concepts of Data Structures and Algorithm, concepts of Stack, Queue and Linked List, Searching, Sorting, Trees, Graphs and File Operations.
- To demonstrate about writing algorithms and reframe step by step approach in solving problems with the help of fundamental data structures.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Recall information for writing Algorithms in solving problems.
CO2	Choose appropriate data structure as applied to specify problem definition.
CO3	Apply problem solving skills & provide a foundation for advanced programming courses using an object-oriented programming methodology.
CO4	Use linear & Non linear Data structures like stacks, Queues, Linked list etc., and show operations like searching, insertion, deletion, traversing mechanism etc.on various data structures.
CO5	Illustrate how to store and retrieve data stored in both main memory and in secondary memory.

SEMESTER II

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U2CACP06	Core 6: Data Structures and C++ Programming - Practical	Batch	2018-2021
Hrs/week:	4 Hrs		Semester	2
			Credits	3

COURSE OBJECTIVES

- To enhance the students to learn field of Data Structure and C++ programming language with various techniques for enhance their analysis and problem solving techniques.
- To learn basic principles of Object Oriented Programming and implementation in real world problems.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Illustrate looping & Decision Making Statements to solve the problems in C++
CO2	Explain about compilation and debug programs in C++ Language using functions and files.

SEMESTER II

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U2CAAT02	Title : Allied 2:Discrete Mathematics	Batch	2018-2021
Hrs/week	5 Hrs		Semester	2
			Credits	4

COURSE OBJECTIVES

- To enable the Students
- To understand the concept of set theory, Logic and Relations
- To learn the concept of languages and Grammars
- To know the concept of Graph theory and its applications

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of set theory, partition of sets, inclusion and exclusion principles.
CO2	Write an argument using logical notation and determine if the argument is valid or invalid.
CO3	Describe the binary relations between two sets and determine if the relation is partial order relation or equivalence relation using set operations.
CO4	Explain the concepts of formal languages and construct the finite state automata.
CO5	State the concept of graphs, enumerate the types of graphs and their applications practical situations.

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U3CACT07	CORE 7: OPERATING SYSTEMS	Batch	2018-2021
Hrs/week	5 Hrs		Semester	3
			Credits	4

Course Objectives:

- To gain knowledge on OS concepts and functioning of modern OS.
- To understand the structure of OS
- To acquire the knowledge of process and Inter process Communications
- To understand the deadlock
- To enhance the knowledge of Memory management and files.

COURSE OUTCOMES (CO)

On successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Define the concepts of operating systems and security
CO2	Explain operating system structure, process and threads
CO3	Illustrate Inter process Communication and scheduling
CO4	Describe deadlock and deadlock prevention
CO5	Explain memory management, file systems and directories

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U3CACT08	Core 8: Java Programming	Batch	2018-2021
Hrs/week	5 Hrs		Semester	3
			Credits	4

COURSE OBJECTIVES

- To understand fundamentals of object – oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.
- To be able to use the Java SDK environment to create, debug and run simple Java programs.
- To understand the Java Programming concepts so as to enable the students of Applications and Applets using Java

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the basic concepts of Object oriented programming
CO2	Explain the loops and decision making statements to solve the problem
CO3	Describe the concepts of threads and string
CO4	Discuss about the Applet programming
CO5	Apply about the different operations on files

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U3CACT09	Core 9: Data Communications and Networks	Batch	2018-2021
			Semester	3
Hrs/week	6 Hrs		Credits	4

COURSE OBJECTIVES:

- To comprehend the use of different types of transmission media and network devices.
- To understand the concepts of flow control, error control and LAN protocols.
- To understand the functions performed by Network Management System.

COURSE OUTCOMES (CO)

On successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Define the various concepts of Network models
CO2	Explain the basics of physical layer and data transmission
CO3	Explain the data link layer controls
CO4	Use communication primitives in the network layer
CO5	Examine the transport layer and application layer

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U3CACP10	Core 10: Java Programming-Practical	Batch	2018-2021
Hrs/week	6 Hrs		Semester	III
			Credits	3

COURSE OBJECTIVES:

- To enhance the students to learn field of java programming language with various techniques for enhance their analysis and problem solving techniques
- To learn basic principles of threads, applets and files for efficient implementation in real world problems.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Understand the basic structure of java programming for declaring and usage of variables.
CO2	Choose the loop and decision making statements to solve given problem
CO3	Design the program using applets
CO4	Implementation of various file operations for a given application

SEMESTER III

Programme Code :	B.C.A.	Programme Title	Bachelor of Computer Application	
Course Code :	18U3CAAT03	Title : Allied 3: Operations Research	Batch	2018-2021
Hrs/week	5		Semester	III
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To Know Operation Research and LPP, solving LPP
- To solve transportation and assignment problems
- To acquire knowledge of queueing theory, PERT and CPM

CO Number	CO Statement
CO1	Define Operations Research, Linear Programming Problem and explain the methods of solving Solution of LPP using Graphical Method simplex method and Big M method
CO2	Solve Transportation and Assignment problems
CO3	Explain the concepts of Game Theory
CO4	Study the concepts of Queueing theory and solving simple problems
CO5	Know distinction between PERT & CPM

SEMESTER IV

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U4CACT11	Core11: WEB DESIGNING	Batch	2018-2021
Hrs/week	5 Hrs		Semester	IV
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To get practiced with creating the schemas and XML Document.
- To acquire knowledge on creating web page to deploy the web applications.
- To understand scripting language in java & VB.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the basic concepts of Internet technologies
CO2	Explain the style sheets and its common tasks
CO3	Define the features of XML and compatibility
CO4	Define XML structures, tags and their elements
CO5	Define the concepts of java script and operators, objects, events

SEMESTER IV

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U4CACT12	Core 12. Systems Analysis and Design	Batch	2018-2021
Hrs/week	6		Semester	IV
			Credits	4

COURSE OBJECTIVES

To enable the students

- To gather data to analyse and specify the requirements of a system.
- To design system components and environments..
- To build general and detailed models that assist programmers in implementing a system. .
- To design a database for storing data and a user interface for data input and output, as well as controls to protect the system and its data.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Understand the principles and tools of systems analysis and design
CO2	Solve a wide range of problems related to the analysis, design and construction of information systems
CO3	Apply Project Management and Requirement analysis,Principles to S/W project development.
CO4	Analyze the cost estimate and problem complexity using various Analyze estimation techniques
CO5	Plan and undertake a major individual project, prepare and deliver coherent and structured verbal and written technical reports

SEMESTER IV

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	18U4CACT13	CORE 13: E-COMMERCE	Batch	2018-2021
Hrs/Week:	5 Hrs		Semester	IV
			Credits	3

COURSE OBJECTIVES

To enable students

- To have knowledge on concepts of e-Commerce.
- To enhance the knowledge in business strategy and inter organisational transactions.
- To understand the concepts of E-Markets, Electronic Data Interchange and E-Business.

COURSE OUTCOMES

On the successful completion of the course, students should be able to achieve the following Outcomes

CO Number	CO Statement
CO1	Understand the basic concepts and technologies used in the field of E-Commerce
CO2	Understand the knowledge of Business Strategy
CO3	Understand the processes of developing and implementing information systems
CO4	Be aware of the ethical, social, and security issues of information systems

SEMESTER IV

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U4CACP14	Title: CORE 14 : WEB DESIGNING PRACTICAL	Batch	2018-2021
Hrs/week:	6 Hrs		Semester	IV
			Credits	3

COURSE OBJECTIVES:

- To enhance the students to learn field of web designing programming language with various techniques for enhance their web page developing techniques.
- To learn basic concepts of html, css and xml.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student should be able to

CO Number	Statement
CO1	Illustrate web page development and designing with use of html
CO2	Use Event Handling Functions
CO3	Apply the basic concept of xml
CO4	Use the css concepts in html
CO5	Implement the dtd in html

SEMESTER – IV

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U4CAAT04	Allied 4:Business Accounting	Batch	2018-2021
			Semester	V
Hrs/week	5		Credits	3

COURSE OBJECTIVES:

- To make the students understand the basic accounting concept and conventions.
- To enlighten the students on the importance of cost ascertainment reduction and control.
- To enable the students to understand the preparation of budgets in the business organizations.

COURSE OUTCOMES (CO)

On the successful completion of the course, students will be able to achieve the following Outcomes

CO Number	Statement
CO1	Explain the basic accounting principles and the procedure to prepare journal and ledger
CO2	Prepare a Final accounts of Sole Trading concern.
CO3	Prepare a cost sheet with adjustments
CO4	Explain the concept of financial accounting and cost accounting.
CO5	Prepare a cash budget and sales budget

SEMESTER – V

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U5CACT15	Core 15. ASP.Net and C#	Batch	2018-2021
Hrs/week	5		Semester	V
			Credits	4

COURSE OBJECTIVES

To enable the students

- To learn about the basic concepts of ASP .NET.
- To learn about the ASP .NET object model and its architecture.
- To learn about the C# and its functions.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand about ASP.Net environment and its applications.
CO2	Know about the various forms in Visual Basic and Session controls.
CO3	Write various applications using C# Language in the .NET Framework.
CO4	Develop distributed applications using .NET Framework.
CO5	Create various applications using C#.Net framework

SEMESTER-V

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U5CACT16	Core 16: Relational Database Management System	Batch	2018-2021
Hrs/week:	5 Hrs		Semester	V
			Credits	4

COURSE OBJECTIVES:

On Completion of this Course

- To understand the concepts of RDBMS.
- To have knowledge on DBMS & RDBMS.
- To enhance their on SQL, DDL, DML, DCL Statements, Select, group by and having clause String and set operations, Aggregate Functions, Nested Sub Queries.
- To develop the skills of Embedded and Dynamic SQL.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concept of Database and Database Design
CO2	Use the Commands and understand table
CO3	Use SQL query structure and modify the table
CO4	Describe about function, grouping and PL/SQL
CO5	Define the concept of Embedded SQL and PL/SQL

SEMESTER V

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U5CACP17	Core 17 : ASP .NET AND C# - PRACTICAL	Batch	2019-2022
Hrs/week	6		Semester	V
			Credits	4

COURSE OBJECTIVES

To enable the students to gain knowledge about the teaching methodologies useful for the implementation and console based application and web based application.

COURSE OUTCOMES (CO)

At the end of the practical session, students would be well-versed in

CO Number	CO Statement
CO1	Design, create, build, and debug arithmetic operations for displaying numeric output using .NET applications.
CO2	Developing a console application in ASP .NET.
CO3	Compute different operations using looping statements.
CO4	Developing applications using C#

SEMESTER V

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U5CACP18	Title : CORE 18 : WEB TECHNOLOGY PRACTICAL	Batch	2018 – 2021
Hrs/week	6 Hours		Semester	V
			Credits	3

COURSE OBJECTIVES:

- To enhance the students to learn field of web technology programming with various techniques for enhance their software development techniques.
- To learn basic concepts of VB.Net, XML and Java Scripting language.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Illustrate the basic operations in software with use of VB.Net
CO2	Use the basic concept of VB.Net, XML and Java Scripting language
CO3	Apply the concept of java script in html
CO4	Apply the concept of xml

SEMESTER VI

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U6CACT19	Core 19:SOFTWARE TESTING	Batch	2018-2021
Hrs/week	5		Semester	VI
			Credits	4

COURSE OBJECTIVES

- To make the students to understand Software Testing principles.
- To discuss the distinctions between types of testing.
- To understand the essential characteristics of tool used for test automation.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	List a range of different software testing techniques and strategies and be able to apply specific (automated) unit testing method to the projects.
CO2	Distinguish characteristics of structural testing methods
CO3	Demonstrate the integration testing which aims to uncover interaction and compatibility problems as early as possible
CO4	Discuss about the functional and system testing methods.
CO5	Demonstrate various issues for object oriented testing with planning, Management, Execution and Reporting.

SEMESTER – VI

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications
Course Code :	18U6CACP20	Core 20: Software Testing- Practical	Batch 2018-2021
Hrs/week	5		Semester VI
			Credits 3

COURSE OBJECTIVES:

- To understand software test automation problems and solutions.
- To learn how to planning a test project, design test cases and data, conduct testing operations, manage software problems and defects, generate a testing report.
- To gain the techniques and skills on how to use modern software testing tools to support software testing projects.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student should be able to

CO Number	CO Statement
CO1	Find practical solutions to the problems.
CO2	Solve specific problems alone or in teams manage a project from beginning to end
CO3	Define, formulate and analyze a problem
CO4	Developing applications and Test them
CO5	Find practical solutions to the problems.

SEMESTER -V

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	18U6CACP21	CORE 21 : PHP AND MY SQL - PRACTICAL	Batch	2018-2021
Hrs/week	6		Semester	VI
			Credits	3

Course Objective: To enable the students to gain knowledge in developing PHP and MySQL Programs for certain specified problems.

Course Outcomes (CO)

At the end of the practical session, students would be well-versed in

CO Number	CO Statement
CO1	Write PHP code to produce outcomes and solve problems.
CO2	Display and insert data using PHP and MySQL.
CO3	Test, debug, and deploy web pages containing PHP and MySQL.

SEMESTER- VI

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	18U6CACP22	CORE 22: PROJECT VIVA-VOCE	Batch	2018-2021
Hrs/week	6		Semester	VI
			Credits	4

Course Objective:

To enable the students to apply practically in a specific area using any specific domain knowledge he/she possesses and get the results.

SEMESTER – V

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	18U5CAET1A	Elective 1: Software Engineering	Batch	2018-2021
Hrs/week	6		Semester	V
			Credits	3

COURSE OBJECTIVES:

To enable the students

- To provide knowledge on Software engineering concepts
- To understand various techniques of cost estimation of software, software design and software Requirements.
- To understand various issues in implementation of software, verification, validation and maintenance of software to give a roadmap to design a new software project.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the various models of software development life cycle
CO2	Explain the software requirement analysis and cost Estimation
CO3	Understand the software design techniques
CO4	Apply verification and validation tools
CO5	Use software testing methods

SEMESTER-V

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	18U5CAET1B	ELECTIVE 1: DATA MINING AND WAREHOUSING	Batch	2018-2021
Hrs/week	4		Semester	V
			Credits	3

COURSE OBJECTIVES

To enable the students

- To know the basics of data mining and warehousing.
- To Understand various techniques in data mining.
- To learn about architecture of data warehouse and its applications

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	To present survey on different learning, classification and data mining foundations.
CO2	To and methods for data Mining applications.
CO3	To solve problems for multi-core or distributed, concurrent/Parallel environments.
CO4	To survey and use latest trends and advances in datamining and warehousing.

SEMESTER – V

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	18U5CAET1C	Elective 1: Computer Graphics	Batch	2018-2021
Hrs/week	6		Semester	V
			Credits	3

Course Objectives:

- To provide knowledge to the students on the basic concepts of computer graphics.
- To gain knowledge 2D and 3D display methods.
- To learn the concepts of multimedia hardware and software.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of output primitives
CO2	Outline of the graphics system
CO3	Explain 2D geometric transformations
CO4	Explain 3D geometric transformations
CO5	Discuss about surface rendering methods

SEMESTER – V

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	18U5CAET2A	ELECTIVE 2: Embedded Systems	Batch	2018-2021
Hrs/week	4		Semester	V
			Credits	3

COURSE OBJECTIVES:

- To make the students to have basic Knowledge and understanding of fundamental embedded systems design paradigms, architectures, possibilities and challenges, both with respect to software and hardware
- Ability to analyze a system both as a whole and in parts and their interaction in the functionality and properties of the system.
- To make the students to have a clear understanding on industrial embedded systems and intelligent embedded system development.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of embedded systems and memory organization
CO2	Explain devices and communication concepts
CO3	Apply embedded programming in High Level Languages
CO4	Explain inter process communication
CO5	Explain real time operating systems

SEMESTER – V

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	18U5CAET2B	ELECTIVE 2: Client Server Technology	Batch	2018-2021
Hrs/week	4		Semester	V
			Credits	3

COURSE OBJECTIVES:

- To understand the concepts of client/server
- To learn the components of client and server application
- To learn the components of client and server application-Connectivity
- To learn the components of client and server application-Software & Hardware
-

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of client/server computing
CO2	Use the components of client/server applications
CO3	Discuss about client/server connectivity
CO4	Explain the client/server application software
CO5	Explain the client/server application hardware

SEMESTER – V

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U5CAET2C	ELECTIVE 2: Web Technology And Its Applications	Batch	2018-2021
Hrs/week:	4 Hrs		Semester	V
			Credits	3

COURSE OBJECTIVES

To enable the students

- To learn about the basic concepts of various networking model and its layers.
- To learn about the concepts of protocol and its architecture.
- To learn about the Java Scripts and XML.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Define the fundamental ideas and standards underlying OSI Model.
CO2	Differentiate the major frameworks allowing to develop TCP/IP and UDP and assess their suitability for specific usage scenarios.
CO3	Explain the link between the concepts of services and business processes and discuss and critique related standards.
CO4	Define the fundamental of scripting languages.
CO5	Describe about how to write a well formed / valid XML document

SEMESTER-VI

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	18U6CAET3A	Elective 3 : Artificial Intelligence and Expert System	Batch	2018-2021
Hrs/week	4		Semester	V
			Credits	3

COURSE OBJECTIVES

To enable the students

To Understand different planning problems and have the basic knowledge how to design and implement AI planning systems

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand the strengths and limitations of various state-space search algorithms and choose the appropriate algorithms for a problem
CO2	Learn the basics of the theory and practice of Artificial Intelligence as a discipline about intelligent agents capable of deciding what to do, and do it
CO3	Apply knowledge representation techniques and problem solving strategies to common AI applications
CO4	Design simple software to experiment with various AI concepts and analyze Results
CO5	Build self-learning and research skills to be able to tackle a topic of interest on his/her own or as part of a team

SEMESTER – VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U6CAET3B	Elective 3: MOBILE AND WIRELESS TECHNOLOGY	Batch	2018-2021
Hrs/week:	4 Hrs		Semester	V
			Credits	3

COURSE OBJECTIVES

To enable the students

To learn the wireless communication on digital mobile communication system and integration of services and applications from fixed networks into networks supporting mobility of end user and wireless access.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand the basics of radio access and networks
CO2	Learn to simulate wireless networks and analyze the simulation results
CO3	Describe the concepts of ad hoc networks, design and implementation issues, and available solutions
CO4	Apply knowledge of wireless sensor networks to various application areas
CO5	Demonstrate advanced knowledge of networking and wireless networking

SEMESTER-VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U6CAET3C	Elective 3 : Cloud Computing	Batch	2018-2021
Hrs/Week	4 Hrs		Semester	5V
			Credits	3

COURSE OBJECTIVES

To enable the students

- To Understand the Cloud computing architectures, applications and challenges and learn about various cloud storages

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand security implications in cloud computing
CO2	Analyse the trade-offs inherent in Cloud Computing
CO3	Identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud, etc.
CO4	Explain the core issues of cloud computing such as security, privacy, and interoperability
CO5	Identify problems, and explain, analyze, and evaluate various cloud computing solutions

SEMESTER – VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	18U6CAET4A	ELECTIVE 4: COMPILER DESIGN	Batch	2018-2021
			Semester	VI
Hrs/Week:	4 Hrs		Credits	3

COURSE OBJECTIVES

To enable the students

- To learn the fundamentals of Compiler Designs and knowledge on High level Programming languages.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand the basics of compilation(computing)
CO2	Understand grammar of compilers
CO3	Understand the intermediate form of codes in compilers
CO4	Understand the code generation technique(Machine code)
CO5	Understand the optimization of code in compilers

SEMESTER – VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	18U6CAET4B	ELECTIVE 4: MOBILE OPERATING SYSTEM	Batch	2018-2021
Hrs/Week:	4 Hrs		Semester	VI
			Credits	3

COURSE OBJECTIVES

To enable the students

To understand the process of developing software for the mobile and create mobile applications on the Android Platform

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand the limitations and challenges of working in a mobile and wireless environment.
CO2	Describe and apply the different types of application models/architectures used to develop mobile software applications.
CO3	Describe the components and structure of a mobile development frameworks (Android SDK and Eclipse Android Development Tools)
CO4	To learn how and when to apply the different components to develop a working system
CO5	Design, implement and deploy mobile applications using an appropriate software development environment.

SEMESTER VI

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	18U6CAET4C	Elective 4: PHP & MySQL	Batch	2018-2021
Hrs/week	4 hrs		Semester	VI
			Credits	3

COURSE OBJECTIVES

Develops skills to create server-side scripts using PHP. Introduces server-side programming concepts and terminology. Explores a variety of server-side techniques and MySQL database manipulation.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Describe and use the features and syntax of programming language PHP
CO2	Create, translate, and process HTML information using the Common Gateway Information (CGI) protocol.
CO3	Apply PHP code to produce outcomes and solve problems.
CO4	Display and insert data using PHP and MySQL. Retrieve, insert, update, and delete data from the relational database MySQL
CO5	Test, debug, and deploy web pages containing PHP and MySQL.