Key Indicator - 1.1 Curriculum Design and Development

1.1.1 Curricula developed and implemented have relevance to the local, regional, national and global developmental needs, which is reflected in the Programme outcomes (POs) and Course Outcomes (COs) of the Programmes offered by the institution

Programme Outcomes (POs) and Course Outcomes (COs) – (2019-2020 Onwards)

DEPARTMENT OF COMPUTER APPLICATIONS

BCA-Computer Applications

PROGRAMME OUTCOMES (POs)

POs	Programme Outcome On completion of Bachelor of Computer Applications Programme, the students will be able to
PO1	**Academic Skills & Social Responsibility** Apply Computing, Mathematical and Scientific knowledge in various disciplines by understanding the concerns of the society
PO2	**Critical Thinking and Innovative Progress** Design the software applications with varying intricacies using programming languages for innovative learning in technology world to meet the changing demands.
PO3	**Personality Development** Perceive Leadership skills to accomplish a common goal with effective communication and understanding of professional, ethical, and social responsibilities.
PO4	**Lifelong Learning** Identify resources for Professional development and apply the skills and tools necessary for computing practice to gain real life experiences**.**
PO5	**Creativity and Holistic Approach** Create a Scientific temperament and novelties of ideas to support research and development in Computer Science to uphold scientific integrity and objectivity.

COURSE OUTCOMES (COs)

Course Title: PROGRAMMING WITH C Course Code: 19UCA1CC1		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Explain the program structure, programming rules, C tokens and syntax.	**K2**
CO2	Apply decision making and looping statements in C Program.	**K3**
CO3	Utilize the concept to arrays and functions.	**K3**
CO4	Identify the role of structure, union and pointers.	**K3**
CO5	Make use of the file operations.	**K3**

Course Title: PRACTICAL I -PROGRAMMING WITH C Course Code: 19UCA1CC1P		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Relate looping structure with arrays.	**K1**
CO2	Demonstrate the concept of basic C operators and functions.	**K2**
CO3	Utilize the concepts of structures, union, pointers and file.	**K3**

Course Title: DATA STRUCTURES Course Code: 19UCA2CC2		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Explain basics of data structures.	**K1**
CO2	State the operations of various data structures.	**K1**
CO3	Make use of the stack, queue and linked lists.	**K2**
CO4	Apply traversal concept on trees and graphs.	**K3**
CO1	Explain basics of data structures.	**K1**

Course Title: PRACTICAL II -DATA STRUCTURES USING C Course Code: 19UCA2CC2P		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recall operations of various data structures using C programming.	**K1**
CO2	Describe sorting and searching techniques using array.	**K2**
CO3	Apply the concepts of traversal on trees and graphs.	**K3**

Key Indicator - 1.1 Curriculum Design and Development

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Programme Outcomes (POs) and Course Outcomes (COs) – (2020-2021 Onwards)

DEPARTMENT OF COMPUTER APPLICATIONS

BCA-Computer Applications

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COURSE OUTCOMES (COs)

Course Title: PROGRAMMING WITH C **Course Code: 19UCA1CC1**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Explain the program structure, programming rules, C tokens and syntax.	**K2**
CO2	Apply decision making and looping statements in C Program.	**K3**
CO3	Utilize the concept to arrays and functions.	**K3**
CO4	Identify the role of structure, union and pointers.	**K3**
CO5	Make use of the file operations.	**K3**

Course Title: PRACTICAL I -PROGRAMMING WITH C **Course Code: 19UCA1CC1P**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Relate looping structure with arrays.	**K1**
CO2	Demonstrate the concept of basic C operators and functions.	**K2**
CO3	Utilize the concepts of structures, union, pointers and file.	**K3**

Course Title: DATA STRUCTURES **Course Code: 19UCA2CC2**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Explain basics of data structures.	**K1**
CO2	State the operations of various data structures.	**K1**
CO3	Make use of the stack, queue and linked lists.	**K2**
CO4	Apply traversal concept on trees and graphs.	**K3**
CO1	Explain basics of data structures.	**K1**

Course Title: PRACTICAL II -DATA STRUCTURES USING C Course Code: 19UCA2CC2P		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recall operations of various data structures using C programming.	**K1**
CO2	Describe sorting and searching techniques using array.	**K2**
CO3	Apply the concepts of traversal on trees and graphs.	**K3**

Course Title: DATABASE MANAGEMENT SYSTEMS Course Code: 19UCA3CC3		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Explain the basic concepts of database design, Architecture and its model	**K2**
CO2	Illustrate structure of relational database	**K2**
CO3	Apply the various SQL queries in the database	**K3**
CO4	Implement the concepts of ER model and its diagram	**K3**
CO5	Relate the concept of transaction management in a database environment	**K3**

Course Title: PRACTICAL III – DBMS Course Code: 19UCA3CC3P		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recall DDL and DML Commands	**K1**
CO2	Apply Arithmetic, Logical and Set operators	**K3**
CO3	Implement string operations	**K3**
CO4	Use Aggregate Functions in SQL Queries	**K3**
CO5	Create Nested Subqueries	**K5**

CRITERION I **POs and COs**

Course Title: PRINCIPLES OF INTERNET **Course Code: 19UCA3NME1**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	State the dangers in Internet	**K1**
CO2	Understand the architecture of Internet	**K2**
CO3	Utilize the Internet	**K3**
CO4	Discuss on Internet tools	**K2**
CO5	Apply Internet for entertainment & multimedia	**K3**

Course Title: PROGRAMMING WITH JAVA **Course Code: 19UCA4CC4**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Explain the fundamental concepts in Object Oriented Programming	**K2**
CO2	List basic programming skills in Java	**K1**
CO3	Illustrate package and exceptions with example	**K2**
CO4	Demonstrate the usage of threading and files	**K2**
CO5	Applet package and Database connectivity	**K3**

Course Title: PRACTICAL IV -PROGRAMMING WITHJAVA **Course Code: 19UCA4CC4P**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recall basic arithmetic c operations, command line arguments and arrays.	**K1**
CO2	Apply polymorphism, inheritance, interface and packages concepts.	**K3**
CO3	Implement all string operations.	**K3**
CO4	Use thread and exception handling concepts.	**K3**

CRITERION I **POs and COs**

Course Title: ANIMATION PRACTICALS **Course Code: 19UCA4SBE1AP**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recall pen, brush tools in Photoshop	**K1**
CO2	Apply resolution, grayscale, black and white to an image	**K3**
CO3	Using layers, masking, rotation, overlapping of an image	**K3**
CO4	Creating custom colors, gradients, grouping, tweening	**K5**

Course Title: HTML5 PRACTICALS **Course Code: 19UCA4SBE1BP**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Understand basic HTML tags	**K1**
CO2	Create a HTML page using keygen, meter and menu Elements	**K5**
CO3	Apply audio components and datalist in HTML5	**K3**

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Digitally Signed
Signed by: Sujatha.V
Designation: Principal
Reason: NAAC
Location: Tiruchirappalli, Tamil Nadu, India
Date: 30-Sep-2024 10:43:52

CRITERION I **POs and COs**

Key Indicator - 1.1 Curriculum Design and Development

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Programme Outcomes (POs) and Course Outcomes (COs) – (2021-2022 Onwards)

DEPARTMENT OF COMPUTER APPLICATIONS

BCA-Computer Applications

PROGRAMME OUTCOMES (POs)

POs	Programme Outcome On completion of Bachelor of Computer Applications Programme, the students will be able to
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PO2	**Critical Thinking and Innovative Progress** Design the software applications with varying intricacies using programming languages for innovative learning in technology world to meet the changing demands.
PO3	**Personality Development** Perceive Leadership skills to accomplish a common goal with effective communication and understanding of professional, ethical, and social responsibilities.
PO4	**Lifelong Learning** Identify resources for Professional development and apply the skills and tools necessary for computing practice to gain real life experiences**.**
PO5	**Creativity and Holistic Approach** Create a Scientific temperament and novelties of ideas to support research and development in Computer Science to uphold scientific integrity and objectivity.

COURSE OUTCOMES (Cos)

Course Title: PROGRAMMING WITH C **Course Code: 21UCA1CC1**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Explain the program structure, programming rules, C tokens and syntax.	**K2**
CO2	Apply decision making and looping statements in C Program.	**K3**
CO3	Utilize the concept to arrays and functions.	**K3**
CO4	Identify the role of structure, union and pointers.	**K3**
CO5	Make use of the file operations.	**K3**

Course Title: PRACTICAL I -PROGRAMMING WITH C **Course Code: 21UCA1CC1P**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Relate looping structure with arrays.	**K1**
CO2	Demonstrate the concept of basic C operators and functions.	**K2**
CO3	Utilize the concepts of structures, union, pointers and file.	**K3**

COURSE TITLE: DATA STRUCTURES **COURSE CODE: 19UCA2CC2**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Outline the basic concepts of Oops, classes, objects and functions	**K1**
CO2	Build the knowledge about Constructor, Inheritance and polymorphism	**K2**
CO3	Illustrate Linear Data structures	**K2**
CO4	Implement Linked list and Tree data structure	**K3**
CO5	Analyze various search and sorting techniques	**K4**

Course Title: PRACTICAL II -DATA STRUCTURES USING C Course Code: 19UCA2CC2P		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recall operations of various data structures using C programming.	**K1**
CO2	Describe sorting and searching techniques using array.	**K2**
CO3	Apply the concepts of traversal on trees and graphs.	**K3**
CO4	Utilize arrays in sorting and searching.	**K3**

Course Title: DATABASE MANAGEMENT SYSTEMS Course Code: 19UCA3CC3		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Explain the basic concepts of database design, Architecture and its model	**K2**
CO2	Illustrate structure of relational database	**K2**
CO3	Apply the various SQL queries in the database	**K3**
CO4	Implement the concepts of ER model and its diagram	**K3**
CO5	Relate the concept of transaction management in a database environment	**K3**

Course Title: PRACTICAL III – DBMS Course Code: 19UCA3CC3P		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recall DDL and DML Commands	**K1**
CO2	Apply Arithmetic, Logical and Set operators	**K3**
CO3	Implement string operations	**K3**
CO4	Use Aggregate Functions in SQL Queries	**K3**
CO5	Create Nested Subqueries	**K5**

CRITERION I **POs and COs**

Course Title: PRINCIPLES OF INTERNET **Course Code: 19UCA3NME1**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	State the dangers in Internet	**K1**
CO2	Understand the architecture of Internet	**K2**
CO3	Utilize the Internet	**K3**
CO4	Discuss on Internet tools	**K2**
CO5	Apply Internet for entertainment & multimedia	**K3**

Course Title: PROGRAMMING WITH JAVA **Course Code: 19UCA4CC4**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Explain the fundamental concepts in Object Oriented Programming	**K2**
CO2	List basic programming skills in Java	**K1**
CO3	Illustrate package and exceptions with example	**K2**
CO4	Demonstrate the usage of threading and files	**K2**
CO5	Applet package and Database connectivity	**K3**

Course Title: PRACTICAL IV -PROGRAMMING WITHJAVA **Course Code: 19UCA4CC4P**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recall basic arithmetic c operations, command line arguments and arrays.	**K1**
CO2	Apply polymorphism, inheritance, interface and packages concepts.	**K3**
CO3	Implement all string operations.	**K3**
CO4	Use thread and exception handling concepts.	**K3**
CO5	Recall basic arithmetic c operations, command line arguments and arrays.	**K3**

CRITERION I **POs and COs**

Course Title: ANIMATION PRACTICALS **Course Code: 19UCA4SBE1AP**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recall pen, brush tools in Photoshop	**K1**
CO2	Apply resolution, grayscale, black and white to an image	**K3**
CO3	Using layers, masking, rotation, overlapping of an image	**K3**
CO4	Creating custom colors, gradients, grouping, tweening	**K5**

Course Title: WEB PROGRAMMING WITH PHP **Course Code: 19UCA5CC5**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Describe the basic concepts of PHP	**K2**
CO2	Implement functions and arrays in PHP	**K3**
CO3	Apply OOPS concepts in PHP	**K3**
CO4	Demonstrate the concepts of session, cookies and FTP	**K2**
CO5	Execute MySQL queries using PHP	**K3**

Course Title: PRACTICAL IV -PROGRAMMING WITHJAVA **Course Code: 19UCA4CC4P**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Apply HTML tags and PHP coding to design an application form	**K3**
CO2	Implement form validation using PHP	**K3**
CO3	Create session for college office bearer selection	**K3**
CO4	Create and manipulate database using MySQL	**K5**

CRITERION I **POs and COs**

Course Title: OPERATING SYSTEMS **Course Code: 19UCA5CC6**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	State the types of Operating System and its Structure	**K1**
CO2	Describe Process Management &Synchronization	**K1**
CO3	Explain various Scheduling and deadlock	**K2**
CO4	Discuss Memory Management &Mass Storage	**K2**
CO5	Illustrate File Systems	**K3**

Course Title: SOFTWARE ENGINEERING **Course Code: 19UCA5CC7**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Describe the basics of Software Engineering	**K1**
CO2	State the concepts of design and Architecture Engineering	**K1**
CO3	Explain object-oriented analysis and design concepts	**K2**
CO4	Demonstrate the design and coding of a software	**K2**
CO5	Make use of various types of software testing	**K3**

Course Title: CLOUD COMPUTING **Course Code: 19UCA5MBE1A**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	State the Architecture of Cloud Computing	**K1**
CO2	Explain the Virtualization of Cloud Computing	**K2**
CO3	Explain the Data storage in Cloud	**K2**
CO4	Discuss the Applications of Cloud Computing	**K2**
CO5	Illustrate the Risks &Data Security	**K3**

CRITERION I **POs and COs**

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Course Title: INTRODUCTION TO DATAMINING AND DATA WAREHOUSING **Course Code: 19UCA5MBE1B**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Understand the concept of data mining and data warehousing	**K1**
CO2	Know the various data mining techniques such as association rule mining	**K2**
CO3	Describe the Characteristics of web and web Mining	**K3**
CO4	Discuss the Knowledge on multidimensional data and OLAP operations	**K3**
CO5	Understand the concept of data mining and data warehousing	**K1**

Course Title: ARTIFICIAL INTELLIGENCE **Course Code: 19UCA5MBE1C**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Explain the AI problem Solving Techniques	**K2**
CO2	Describe Several General-Purpose Search Techniques	**K3**
CO3	Explain Various Heuristic Search Algorithms	**K2**
CO4	Discuss the Predicate Logic and Relationships for Knowledge Representation	**K3**
CO5	Apply the Use of Rules to Encode Knowledge	**K2**

Course Title: PRACTICAL - PC PACKAGES **Course Code: 19UCA5SBE2AP**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Apply the fundamental features to create a website	**K1**
CO2	Develop blogs and post	**K2**
CO3	Access images and media files	**K2**
CO4	Demonstrate website customization	**K3**
CO5	Implement the plugin capabilities	**K3**

CRITERION I **POs and COs**

Course Title: PRACTICAL - COREL DRAW **Course Code: 19UCA5SBE2BP**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Define usage of Corel Draw X7	**K1**
CO2	Describe formatting tool sin Corel Draw	**K2**
CO3	Creating effective document	**K3**
CO4	Demonstrating all options in shapes tool	**K3**
CO5	Developing a sample webpage	**K3**

Course Title: MOBILE APPLICATIONS DEVELOPMENT LAB **Course Code: 19UCA5SBE3AP**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Illustrate the android application development tools with installation.	**K2**
CO2	Develop user interfaces for the android platform.	**K3**
CO3	Apply Java programming concepts to android Application development.	**K3**

Course Title: PRACTICAL-MULTIMEDIA SYSTEMS **Course Code: 19UCA5SBE3BP**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Understand and apply the basic concepts of Multi media	**K1**
CO2	Demonstrate the Animation with Music	**K2**
CO3	Develop logo using images and graphics	**K3**

CRITERION I **POs and COs**

Course Title: COMPUTER NETWORKS **Course Code: 19UCA6CC8**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Describe the design and issues of the layers	**K1**
CO2	State the concepts of physical layer and datalink layer	**K1**
CO3	Explain the various routing algorithms	**K2**
CO4	Demonstrate the protocols of transport layers	**K2**
CO5	Explain the function of application layer	**K2**

Course Title: INTERNET OF THINGS **Course Code: 19UCA6CC9**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Explain IoT enabling Technologies.	**K2**
CO2	Analyze applications of IoT in real time scenario	**K4**
CO3	Design a portable IoT using Raspberry pi	**K5**
CO4	Explain Data Analytics for IoT.	**K2**
CO5	Illustrate Tool sin IoT	**K3**

Course Title: PYTHON PROGRAMMING **Course Code: 19UCA6MBE2A**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Understand Python's core data types while writing new programs	**K1**
CO2	Demonstrate different decision-making statements	**K2**
CO3	Use the knowledge of file concepts	**K3**

CRITERION I **POs and COs**

Course Title: **R PROGRAMMING FOR DATA ANALYSIS** **Course Code: 19UCA6MBE2B**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recognize Data Analytics Lifecycle	**K1**
CO2	State Data types and its Values	**K1**
CO3	Classify Operations and Testing Conditions	**K2**
CO4	Discuss Functions and Matrices	**K2**
CO5	Operate Data Frames and Plots	**K3**

Course Title: DIGITAL MARKETING **Course Code: 19UCA6MBE2C**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Explain the basic concept of Digital Marketing	**K1**
CO2	Discuss the concepts of Display Advertising	**K2**
CO3	Discuss the Search Engine Advertising	**K2**
CO4	Utilize the Social Media Platforms	**K3**
CO5	Illustrate the Search Engine Optimization	**k3**

Course Title: PRACTICAL-PYTHON PROGRAMMING **Course Code: 19UCA6MBE3AP**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Define usage of R& R studio	**K1**
CO2	Describe objects & vectors	**K2**
CO3	Create data frames and matrix	**K3**
CO4	Manipulate data frames and matrices using functions	**K3**
CO5	Demonstrate data visualization	**K3**

CRITERION I **POs and COs**

Course Title: PRACTICAL-DOT NETPROGRAMMING **Course Code: 19UCA6MBE3CP**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Design a web form using server and standard controls	**K3**
CO2	Implement form validation in Dot Net	**K3**
CO3	Connect and manipulate the database with the Dot Net	**K3**
CO4	Develop a web application by their own	**K5**
CO5	Design a web form using server and standard controls	**K3**

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DEPARTMENT OF COMPUTER APPLICATIONS

BCA-Computer Applications

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PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSONO.	The students of Bachelor of Computer Applications will be able to,	POs Addressed
PSO1	Understand the concepts of logical and critical thinking with adequatepractical skills.	PO1 PO2 PO4 PO5
PSO2	Adopt necessary technical, scientific, managerial and financial knowledge to be employable or purse higher education.	PO1 PO2 PO4
PSO3	Apply neoteric technology in various domains and evaluate the methodof implementing it.	PO1 PO2 PO4
PSO4	Design and create innovative ideas that meet the requirements of an entrepreneur and software industry.	PO1 PO2 PO4 PO5
PSO5	Explore the ethical values, sustainability and productivity.	PO3 PO4 PO5

COURSE OUTCOMES (COs)

Course Title: PROGRAMMING IN C Course Code: 22UCA1CC1		
CO Number	CO Statement On the successful completion of the course, students will be able to,	Cognitive Level
CO1	Define the basic concepts of C Programming	K1
CO2	Illustrate the components of C programming	K2
CO3	Build algorithms and data structures swiftly and faster computation using programs	K3
CO4	Apply the knowledge of programming concepts to develop programs	K4
CO5	Solve real time problems using C	K5

Course Title: C PROGRAMMING (P) Course Code: 22UCA1CC1P		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Identify the logic for a given problem	K1, K2
CO2	Recognize the syntax and construction of Cprogramming code	K1, K2
CO3	Apply the steps involved in compiling, linking and debugging C code	K3, K4
CO4	Analyze the concepts of iteration or looping,branching, array, structure, union and pointers	K4
CO5	Create C programs using all the concepts thathave been covered in the theory course	K4

Course Title: PROGRAMMING IN JAVA Course Code: 22UCA2CC2		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recite the basic programming skills	**K1**
CO2	Understand the Java features	**K2**
CO3	Analyze OOPs concepts	**K4**
CO4	Apply the programming skills in various domains	**K3**
CO5	Solve real time problems using Java	**K5**

Course Title: JAVA PROGRAMMING (P) Course Code: 22UCA2CC2P		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Ability to write the programs using Classes and Objects	**K3**
CO2	Understand use of Inheritance and Interfaces	**K2**
CO3	Recognize Package concepts, String and File Handling functions	**K2**
CO4	Apply Multithreading and Exception Handling concepts.	**K3**
CO5	Create Swing programs and JDBC connection	**K5**

CRITERION I **POs and COs**

Course Title: DATA STRUCTURES **COURSE CODE: 22UCA2CC3**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Define the basic concepts of Data Structure	**K1**
CO2	Demonstrate the operations of Linear and Non-Linear Structure	**K2**
CO3	Examine the Data Structure operations	**K3**
CO4	Analyse the various types of Data Structure	**K4**
CO5	Solve the problem using Different Structures	**K5**

Course Title: DATABASE MANAGEMENT SYSTEMS **Course Code: 22UCA3CC4**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Define the basic concepts of database design, architecture and its data model	**K1**
CO2	Illustrate the structure of Relational database	**K2**
CO3	Apply the various queries in the database	**K3**
CO4	Examine the database design and E-R model	**K4**
CO5	Explain the concepts of Relational Database Design	**K2, K5**

Course Title: DATABASE MANAGEMENT SYSTEMS (P) **Course Code: 22UCA3CC3P**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recall DDL and DML Commands	**K1**
CO2	Apply Arithmetic, Logical and Set operators	**K3**
CO3	Implement string operations	**K3**
CO4	Use Join operations in SQL Queries	**K3**
CO5	Create Bank Database	**K5**

Course Title: ANIMATION TOOLS - I (P) Course Code: 22UCA3GEC1P		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Understand the basic commands of HTML	**K1**
CO2	Illustrate the basic structure of HTML document and the methods to create, save and open it.	**K2**
CO3	Apply HTML commands to use various events and elements like Text, Media, Tables, Lists, Images in a web page	**K3**
CO4	Analyze the method of creating a web page with different events and elements including images and hyperlinks.	**K4**
CO5	Inspect a web page with various commands and interactive elements of HTML	**K4**

Course Title: PROGRAMMING IN PYTHON Course Code: 22UCA4CC5		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Outline the basic syntax and semantics of python programming language	**K1**
CO2	Summarize the problem-solving approach using python statements	**K2**
CO3	Build the python program using modules	**K3**
CO4	Examine the python programming concepts to develop programs	**K4**
CO5	Develop a python program to solve real-time problems	**K5**

Course Title: PROGRAMMING IN PYTHON (P) Course Code: 22UCA4CC4P		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recognize the syntax and semantics of Python	**K1**
CO2	Identify suitable techniques to construct a Python program.	**K2**
CO3	Implement the concepts of numbers, math functions and string functions in Python	**K3**
CO4	Analyze the logical structures which are used to the real-time applications.	**K4**
CO5	Develop a real-time application using Python programming	**K5**

CRITERION I **POs and COs**

Course Title: ANIMATION TOOLS- II (P) **Course Code: 22UCA4GEC2P**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Learn the basic concepts of animation as an art.	**K1**
CO2	Apply different types of tools	**K3**
CO3	Use trace and mask in image	**K3**
CO4	Create shape & motion tweening	**K4**
CO5	Develop 2D animations	**K5**

Course Title: DOCUMENTATION AND PRESENTATION TOOLS(P) **Course Code: 22UCA4SEC1P**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Creating documents using template in MS–word	**K1**
CO2	Demonstrate usage of slides in MS–Power point	**K2**
CO3	Creating slides with Multimedia tools	**K3**
CO4	Ability to understand the various kinds of tools.	**K2**
CO5	Develop e-content in power point by their own	**K4**

Course Title: PROGRAMMING IN PHP **Course Code: 22UCA5CC6**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Outline the basic concepts in PHP Programming	**K1**
CO2	Describe the logical structure of PHP Programming	**K2**
CO3	Construct the web page using PHP Programming	**K3**
CO4	Analyze the PHP Programming concepts to develop Website	**K4**
CO5	Develop a real-time website using PHP Programming	**K5**

Course Title: PHP WITH MYSQL (P) Course Code: 22UCA5CC5P		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recall the syntax and semantics of PHP.	**K1**
CO2	Identify suitable techniques to construct a web page.	**K2**
CO3	Implement the PHP concepts to develop a website	**K3**
CO4	Analyze the logical structures which are used to the real-time applications.	**K4**
CO5	Develop a real-time application using PHP programming	**K5**

Course Title: SOFTWARE ENGINEERING Course Code: 22UCA5CC7		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Describe the basics of Software Engineering	**K1**
CO2	Summarize the design models	**K2**
CO3	Explain object-oriented analysis and design concepts	**K4**
CO4	Demonstrate the coding of a software	**K3**
CO5	Evaluate various software testing techniques	**K5**

Course Title: DATA MINING Course Code: 22UCA5CC8		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Illustrate the fundamental concepts, benefits, and problem areas Associated with data mining.	**K1**
CO2	Elaborate different steps involved in the process of data preprocessing.	**K2**
CO3	Summarize various models of data warehousing and online analytical processing.	**K3**
CO4	Classify algorithm to predict accurately the target class of objects.	**K4**
CO5	Evaluate the working pattern of the cluster analysis algorithm.	**K5**

Course Title: MATLAB (P) **Course Code: 22UCA5DSE1A**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Identify the logic for a given a problem	**K1**
CO2	Recognize the syntax and construction of MATLAB programming code	**K2**
CO3	Analyze the concepts various functions	**K3**
CO4	Interpret and visualize simple mathematical functions and operations	**K4**
CO5	Implement simple mathematical functions/equations in numerical computing environment	**K4**

Course Title: **DATA MINING (P)** **Course Code: 22UCA5DSE1BP**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Understand how to perform data mining tasks using the WEKA Toolkit	**K1**
CO2	Recognize various kinds of implementation	**K2**
CO3	Demonstrate the Pre-processing, Classification, etc. in large data sets	**K3**
CO4	Ability to apply algorithms as a component to the existing tools	**K3, K4**
CO5	Implement simple mining techniques for realistic data.	**K4**

Course Title: R PROGRAMMING (P) **Course Code: 22UCA5DSE1CP**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Understand and use R – Data Structures.	**K2**
CO2	Explain the basic functions to enhance the effective usage of R Programming	**K2**
CO3	Apply R programming and understand different data frames	**K3**
CO4	Organize R Programme using charts	**K4**
CO5	Analyze vector using R – programming capabilities	**K4**

CRITERION I **POs and COs**

Course Title: DATA ANALYTICS USING EXCEL (P) **Course Code: 22UCA5SEC2P**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Make use of the basic formatting and editing options	**K3**
CO2	Interpret the data using Conditional formatting options in Excel	**K2**
CO3	Explain the purpose of using functions in the workbook	**K2**
CO4	Organize the data using pivot tables & pivot charts in MS-Excel	**K3**
CO5	Build the basic Lookup functions to enhance the effective usage ofexcel functions in the workbook	**K4**

Signature Not Verified
Digitally Signed
Signed by: Sujatha.V
Designation: Principal
Reason: NAAC
Location: Tiruchirappalli, Tamil Nadu, India
Date: 30-Sep-2024 10:43:52

Key Indicator - 1.1 Curriculum Design and Development

1.1.1 Curricula developed and implemented have relevance to the local, regional, national and global developmental needs, which is reflected in the Programme outcomes (POs) and Course Outcomes (COs) of the Programmes offered by the institution

Programme Outcomes (POs) and Course Outcomes (COs) – (2023-2024 Onwards)

DEPARTMENT OF COMPUTER APPLICATIONS

BCA-Computer Applications

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEOs	Statements
PEO1	**LEARNING ENVIRONMENT** To facilitate value-based holistic and comprehensive learning byintegrating innovative learning practices to match the highest qualitystandards and train the students to be effective leaders in their chosen fields.
PEO2	**ACADEMIC EXCELLENCE** To provide a conducive environment to unleash their hidden talents andto nurture the spirit of critical thinking and encourage them to achieve their goal.
PEO3	**EMPLOYABILITY** To equip students with the required skills in order to adapt to the changing global scenario and gain access to versatile career opportunities in multidisciplinary domains.
PEO4	**PROFESSIONAL ETHICS AND SOCIAL RESPONSIBILITY** To develop a sense of social responsibility by formulating ethics and equity to transform students into committed professionals with a strongattitude towards the development of the nation.
PEO5	**GREEN SUSTAINABILITY** To understand the impact of professional solutions in societal and environmental contexts and demonstrate the knowledge for an overallsustainable development.

PROGRAMME OUTCOMES (POs)

POs	Programme Outcome On completion of Bachelor of Computer Applications Programme, the students will be able to
PO1	**Academic Skills & Social Responsibility** Apply Computing, Mathematical and Scientific knowledge in various disciplines by understanding the concerns of the society
PO2	**Critical Thinking and Innovative Progress** Design the software applications with varying intricacies using programming languages for innovative learning in technology world to meet the changing demands.
PO3	**Personality Development** Perceive Leadership skills to accomplish a common goal with effective communication and understanding of professional, ethical, and social responsibilities.
PO4	**Lifelong Learning** Identify resources for Professional development and apply the skills and tools necessary for computing practice to gain real life experiences**.**
PO5	**Creativity and Holistic Approach** Create a Scientific temperament and novelties of ideas to support research and development in Computer Science to uphold scientific integrity and objectivity.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSONO.	The students of Bachelor of Computer Applications will be able to,	POs Addressed
PSO1	Understand the concepts of logical and critical thinking with adequatepractical skills.	PO1 PO2 PO4 PO5
PSO2	Adopt necessary technical, scientific, managerial and financial knowledge to be employable or purse higher education.	PO1 PO2 PO4
PSO3	Apply neoteric technology in various domains and evaluate the methodof implementing it.	PO1 PO2 PO4
PSO4	Design and create innovative ideas that meet the requirements of anentrepreneur and software industry.	PO1 PO2 PO4 PO5
PSO5	Explore the ethical values, sustainability and productivity.	PO3 PO4 PO5

COURSE OUTCOMES (COs)

Course Title: PYTHON PROGRAMMING Course Code: 23UCA1CC1		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recall the fundamental concepts of Python	K1
CO2	Demonstrate the problem-solving approach using Python statements	K2
CO3	Construct the Python program using functions andmodules	K3
CO4	Analyze the Python programming concepts to developprograms	K4
CO5	Develop a Python program to solve real-time problems	K5

Course Title: PYTHON PROGRAMMING LAB(P) Course Code: 23UCA1CC1P		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Recall the syntax and semantics of Python.	**K1**
CO2	Identify the problem and solve using Pythonprogramming techniques.	**K2**
CO3	Identify suitable programming constructs forproblem solving.	**K3**
CO4	Analyze various concepts of Python language tosolve the problem in an efficient way.	**K4**
CO5	Develop a Python program for a given problemand test for its correctness.	**K5**

Course Title: PROGRAMMING IN C++ Course Code: 23UCA2CC2		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Define the fundamental concepts of object-oriented program	**K1**
CO2	Illustrate the components of C++ program	**K2**
CO3	Build algorithms and data structures swiftly and faster computation using programs	**K3**
CO4	Apply programming knowledge to develop programs	**K4**
CO5	Solve real time problems using C++ concepts	**K5**

Course Title: PROGRAMMING IN C++ (P) Course Code: 23UCA2CC2P		
CO Number	**CO Statement On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Identify the logic for a given problem	**K1**
CO2	Recognize the syntax and construction of C++ programming code	**K2**
CO3	Apply the steps involved in compiling, linking and debugging C++ code	**K3**
CO4	Analyze the concepts of overloading, friend function, inheritance, abstract class and polymorphism	**K4**
CO5	Create C++ programs using all the concepts that have been covered in the theory course	**K5**

CRITERION I **POs and COs**

Course Title: DATA STRUCTURES **Course Code: 22UCA2CC3**		
CO Number	**CO Statement** **On the successful completion of the course, students will be able to,**	**Cognitive Level**
CO1	Define the basic concepts of Data Structure	**K1**
CO2	Demonstrate the operations of Linear and Non-Linear Structure	**K2**
CO3	Examine the Data Structure operations	**K3**
CO4	Analyse the various types of Data Structure	**K4**
CO5	Solve the problem using Different Structures	**K5**

Signature Not Verified
Digitally Signed
Signed by: Sujatha.V
Designation: Principal
Reason: NAAC
Location: Tiruchirappalli, Tamil Nadu, India
Date: 30-Sep-2024 10:43:52