Silda Chandrasekhar College
Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department of **BCA**

Name of the teacher:**Ashis Dey & Bisweswar Bera**

Stream: BCA

Paper code: **C Programming(T+P) (BCAHMJ101)**Major/~~Minor~~

Teaching plan for 1st semester students				
Syllabus allotted			**Paper - C Programming(T+P) (BCAHMJ101) Major/~~Minor~~**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
Sep-2023	4L	**Major-1** **C Programming**	4L	**Module- I Introduction to Programming** The Basic Model of Computation, Algorithms, Flow-charts, Programming Languages, Compilation, Linking and Loading, Testing and Debugging, Documentation
Sep-2023	10L		10L	**Module- II Algorithms for Problem Solving** xchanging values of two variables, summation of a set of numbers, Decimal Base to Binary Base conversion, Reversing digits of an integer, GCD (Greatest Common Division) of two numbers, Test whether a number is prime, Organize numbers in ascending order, Find square root of a number, factorial computation, Fibonacci sequence, Evaluate 'sin x' as sum of a series, Reverse order of elements of an array, Find largest number in an array, Print elements of upper triangular matrix, multiplication of two matrices, Evaluate a Polynomial

Sep-2023	4L		4L	**Module- III Introduction to 'C' Language** Character set, Variables and Identifiers, Built-in Data Types, Variable Definition, Arithmetic operators and Expressions, Constants and Literals, Simple assignment statement, Basic input/output statement, Simple 'C' programs.
Oct-2023	7L		7L	**Module- IV Conditional Statements and Loops** Decision making within a program, Conditions, Relational Operators, Logical Connectives, if statement, if-else statement, Loops: while loop, do while, for loop, Nested loops, Infinite loops, Switch statement, structured Programming.
Oct-2023-Nov-2023	6L		6L	**Module- V Arrays** One dimensional array: Array manipulation; Searching, Insertion, Deletion of an element from an array; Finding the largest/smallest element in an array; Two dimensional arrays, Addition/Multiplication of two matrices, Transpose of a square matrix; Null terminated strings as array of characters, Standard library string functions
Nov-2023	6L		6L	**Module- VI Functions** Top-down approach of problem solving, Modular programming and functions, Standard Library of C functions, Prototype of a function: Formal parameter list, Return Type, Function call, Block structure, passing arguments to a Function: call by reference, call by value, Recursive Functions, arrays as function arguments.
Nov-2023	3L		3L	**Module- VII Storage Classes** Scope and extent, Storage Classes in a single source file: auto, extern and static, register, Storage Classes in multiple source files: extern and static
Dec-2023	6L		6L	**Module- VIII Structures and Unions**

				Structure variables, initialization, structure assignment, nested structure, structures and functions, structures and arrays: arrays of structures, structures containing arrays, unions
Dec-2023	6L		6L	**Module- IX Pointers** Address operators, pointer type declaration, pointer assignment, pointer initialization, pointer arithmetic, functions and pointers, Arrays and Pointers, pointer arrays, pointers and structures, dynamic memory allocation.
Dec-2023	4L		4L	**Module- X Self-Referential Structures and Linked Lists** Creation of a singly connected linked list, traversing a linked list, Insertion into a linked list, Deletion from a linked list
			Internal Assessment	
Jan-2024	4L		4L	**Module- XI File Processing.** Concept of Files, File opening in various modes and closing of a file, reading from a file, writing onto a file
Dec-2023 to Jan-2024	15L		15L	**MJ-1P: Programming in C Lab** Write a program to check a year is Leap year or not. 2. Write a program to solve the following Quadratic equation $Ax_2 + Bx + C = 0$ 3. Write a program to print the sum and product of digits of an integer. 4. Write a program to find the reverse a number and then check the number is palindrome or not. 5. Write a program to compute the sum of the first n terms of the following series S = 1+1/2+1/3+1/4+…… 6. Write a program to compute the sum of the first n terms of the following series S =1-2+3-4+5……. 7. Write a program to find the value of cosxfrom the following Cos series: $Cosx = 1-x_2/2!+x_4/4!-.....\infty$ 8. Write a program to find the GCD and LCM of two numbers. 9. Write a program to display Armstrong

				numbers between the range a to b. 10. Write a program to display Strong numbers between the range a to b. 11. Write a program to convert a Decimal number into its equivalent Binary number. 12. Write a program to convert a Binary number into its equivalent Decimal number. 13. Write a program to convert a Binary number into its equivalent Octal number. 14. Write a function to find whether a given no. is prime or not. Use the same to generate the prime numbers less than 100. 15. Write a program to compute the factors of a given number. 16. Write a function that checks whether a given string is Palindrome or not. Use this function to find whether the string entered by user is Palindrome or not. 17. Write a program to count number of vowels, consonants, digits and blank spaces in a line of text. 18. Write a macro that swaps two numbers. WAP to use it. 19. Write a program in which a function is passed address of two variables and then alter its contents.
Jan-2024-Feb-2024			**Revision and preparation for university exam**	

Silda Chandrasekhar College
Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department of **BCA**

Name of the teacher:**Ashis Dey**

Stream: BCA

Paper code: Web Designing (**BCASEC01), SEC**

Teaching plan for 1st semester students				
Syllabus allotted			**Paper - Web Designing (BCASEC01),SEC**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
Sep-2023	4L	**SEC** **Web Designing**	4L	**MODULE-I: Introduction to Internet Basic** The Basic of the Internet, Concepts of Domain, IP Addressing, Resolving Domain Names, Overview of TCP/IP and its Services, WWW.
Sep-2023-Nov-2023	10L		10L	**MODULE-II: Designing Pages with HTML** Introduction to HTML, Essential Tags, Deprecated Tags, Tags and Attributes, Text Styles and Text Arrangements, Text, Effects, Exposure to Various Tags(DIV, MARQUEE, NOBR, DFN, HR, LISTING, Comment, IMG), Color and Background of WebPages, Lists and their Types, Attributes of Image Tag, Hypertext, Hyperlink and Hypermedia, Links, Anchors and URLs, Links to External Documents, Different Section of a Page and Graphics, Foot note and e-Mailing, Creating Table, Frame, Form and Style Sheet.

Dec-2023	4L		4L	**MODULE-III: DHTML** Dynamic HTML, Document Object Model, Features of DHTML, CSSP (Cascading Style Sheet Positioning) and JSSS (JavaScript assisted Style Sheet), Layers of Netscape, The ID Attribute, DHTML Events..
			Internal Assessment	
Jan-2024	7L		7L	**MODULE – IV: Style Sheets** Need for CSS, introduction to CSS, basic syntax and structure, Classes and Pseudo Classes, CSS tags for setting background images, colors and properties, manipulating texts, using fonts, borders and boxes, margins, padding lists, positioning etc. (Programming Assignments based on above topics)
Jan-2024-Feb-2024			**Revision and preparation for university exam**	

Silda Chandrasekhar College

Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department of **BCA**

Name of the teacher:**Debasish Bera**

Stream: BCA

Paper code: **Basics of information technology (IT) (MDC01), MDC**

Teaching plan for 1st semester students	
Syllabus allotted	**Paper** - **Basics of information technology (IT) (MDC01), MDC**

Month	Expected number of classes	Paper	Number of Lectures	Topics to be covered
Sep-2023	4L	**MDC** **Basics of information technology (IT)**	4L	**Unit-I: Introduction to Computers** Introduction, Definition, Characteristics of computer, Evolution of Computer, Block Diagram Of a computer, Generations of Computer, Classification Of Computers, Applications of Computer, Capabilities and limitations of computer
Sep-2023-Oct-2023	5L		5L	**Unit-II: Basic Computer Organization:** Role of I/O devices in a computer system. Input Units: Keyboard, Terminals and its types. Pointing Devices, Scanners and its types, Voice Recognition Systems, Vision Input System, Touch Screen, Output Units: Monitors and its types. Printers: Impact Printers and its types. Non-Impact Printers and its types, Plotters, types of plotters, Sound cards, Speakers.
Nov-2023-Dec-2023	4L		4L	**Unit-III: Software:** Software and its needs, Types of S/W. System Software: Operating System, Utility Programs Programming Language: Machine Language, Assembly Language, High Level Language their advantages & disadvantages. Application S/W and its types: Word Processing, Spread Sheets Presentation, Graphics, DBMS s/w.
			Internal Assessment	
Dec-2023-Jan-2024	5L		4L	**Unit-IV: Operating System:** Functions, Measuring System Performance, Assemblers, Compilers and Interpreters. Batch Processing, Multiprogramming, Multi-Tasking, Multiprocessing, Time Sharing, DOS, Windows, Unix/Linux
	5L		5L	**Unit-VI: Data Communication:** Communication Process, Data Transmission speed, Communication Types (modes), Data Transmission, Medias, Modem and its

				working, characteristics, Types of Networks, LAN Topologies, Computer Protocols, Concepts relating to networking.
	5L		5L	**Unit-VII: Business Data Processing:** Introduction, data storage hierarchy, Method of organizing data, File Types, File Organization, File Utilities.
Jan-2024-Feb-2024			**Revision and preparation for university exam**	

Silda Chandrasekhar College

Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department of**BCA**

Name of the teacher:**Debasish Bera**

Stream: BCA

Paper code: **PC Software (BCAMI01)**~~Major~~/Minor

Teaching plan for 1st semester students				
Syllabus allotted			**Paper - PC Software (BCAMI01)**~~Major~~/Minor	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
Sep-2023	15L		15L	**Module – I: <u>Using Office with MS-Word</u>** Introduction to word processing software and its features, creating new document, Saving documents, Opening and printing documents. Home Tab: Setting fonts, Paragraph settings, Various styles (Normal, no spacing, Heading1, Heading2, Title, Strong), Find & replace, Format painter, Copy paste and paste

		Minor-1 PC Software		special. Insert Tab: Pages, Tables, pictures, clipart, shapes, header & footer, word art, equation and symbols. Page Layout Tab: Page setup, page Background, Paragraph (indent and spacing). Mailing Tab: Create envelops and Labels, Mail merge. Review Tab: Spelling and grammar check, new comment, Protect document, View Tab: Document views, Zoom, Window (New window, Split, Switch window).
Sep-2023-Oct-2023	15L		15L	**Module — II Working with MS-Excel** Introducing Excel, Use of excel sheet, creating new sheet, Saving, Opening, and printing workbook. Home Tab: Font, Alignment, Number, Styles and cells and editing, Conditional Formatting. Insert Tab: Table, Charts (column chart, Pie chart, Bar chart, Line chart) and Texts (header & footer, word art, signature line). Page Layout Tab: Page setup options, Scale to fit (width, height, scale). Formulas Tab: Autosome (sum, average, min, max), logical (IF, and, or, not, true, false), Math &trig (sin, cos, tan, ceiling, floor, fact, mod, log), watch window. Data Tab: Get external data from MS Access, Sort and filter options, Data validation, Group and ungroup. Review Tab: Protect sheet, protect workbook,

				Share workbook. View Tab: Page breaks, Page layout, Freezing panes, Split and hide.
Nov-2023-Dec-2023	15L		15L	**Module – III: Working with MS-PowerPoint** Introducing power point, Use of power point presentation, creating new slides saving, Opening and printing. Home Tab: New slide, Layout, Reset, Delete, setting text direction, align text, convert to smart art, Drawing options. Insert Tab: Table, picture, clipart, photo album, smart art, shapes and chart, movie and sound, hyperlink and action, text box, word art, object. Design Tab: Page setup options, slide orientation, applying various themes, selecting background style and formatting it. Animations Tab: Custom animation for entrance, exit and emphasis, applying slide transition, setting transition speed and sound, animation on rehears timing. Slide show &view Tab: Start slid show options, setup options. View tab: Presentation views, colours and window option.
			Internal Assessment	
Dec-2023-Jan-	15L			**Module – IV Working with MS-Access** Front end and back end of application, Introduction to DBMS, Features of DBMS, creating blank databases, Saving it in accdb format.

2024			15L	Defining data types in ms access. Home Tab: Datasheet view, design vew, pivot chart view, pivot table view, sort and filter options. Create Tab : Creating tables, Creating reports, Query wizard. External Data Tab : importing data from access and excel sheet, exporting data to excel and ms word. Datasheet Tab: Relationships, Fields and columns options, Data type and formatting options.
Jan-2024-Feb-2024			**Revision and preparation for university exam**	

Silda Chandrasekhar College

Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department: ……BCA……

Name of the teacher:……ASHIS DEY

Stream: ……BCA……

Paper code: …**- BCADSE1.1T: Java Programming**

Teaching plan for 5th semester students				
Syllabus allotted			**Paper - BCADSE1.1T: Java Programming**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
SEP-23	10L	**Java Programming**	10L	**TERM-I Introduction to Java:** Java Architecture and Features, Understanding the semantic and syntax differences between C++ and Java, Compiling and Executing a Java Program, Variables, Constants, Keywords Data Types, Operators (Arithmetic, Logical and Bitwise) and Expressions, Comments, Doing Basic Program Output, Decision Making Constructs (conditional statements and loops) and Nesting, Java Methods (Defining, Scope, Passing and Returning Arguments, Type Conversion and Type and Checking, Built- in Java Class Methods).
OCT-23	10L		10L	**TERM-II Arrays, Strings and I/O:** Creating & Using Arrays (One Dimension and Multi-dimensional), Referencing Arrays Dynamically, Java Strings: The Java String class, Creating & Using String Objects, Manipulating Strings, String Immutability & Equality, Passing Strings To & From Methods, String Buffer Classes. Simple I/O using System out

				and the Scanner class, Byte and Character streams, Reading/Writing from console and files. **TERM-III Object-Oriented Programming Overview:**
NOV-23	10L		10L	Principles of Object-Oriented Programming, Defining & Using Classes, Controlling Access to Class Members, Class Constructors, Method Overloading, Class Variables & Methods, Objects as parameters, final classes, Object class, Garbage Collection. **TERM-IV Inheritance, Interfaces, Packages, Enumerations, Autoboxing and Metadata Inheritance:**
NOV-23	10L		10L	(Single Level and Multilevel, Method Overriding, Dynamic Method Dispatch, Abstract Classes), Interfaces and Packages, Extending interfaces and packages, Package and Class Visibility, Using Standard Java Packages (util, lang, io, net), Wrapper Classes, Autoboxing/Unboxing, Enumerations and Metadata. **TERM-V Exception Handling, Threading, Networking and Database Connectivity**
DEC-23	10L		10L	Exception types, uncaught exceptions, throw, built-in exceptions, Creating your own exceptions; Multi-threading: The Thread class and Runnable interface, creating single and multiple threads, Thread prioritization, synchronization and communication, suspending/resuming threads. Usingjava.net package, Overview of TCP/IP and Datagram programming. Accessing and manipulating databases using JDBC.
JAN-24	10L		10L	**TERM-VI Applets and Event Handling:** Java Applets: Introduction to Applets, Writing Java Applets, Working with Graphics, Incorporating Images &Sounds.Event Handling Mechanisms, Listener Interfaces, Adapterand Inner Classes. The design and

				Implementation of GUIs using the AWT controls, Swing components of JavaFoundation Classes such as labels, buttons, text fields, layout managers, menus, events and listeners;Graphic objects for drawing figures such as lines, rectangles, ovals, using different fonts. Overview of servlets.

Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department: ……BCA……

Name of the teacher:……ASHIS DEY…….

Stream: ……BCA……

Paper code: … **BCADSE1.1P: Java Programming Lab**

Syllabus allotted			**Paper - BCADSE1.1P: Java Programming Lab**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
SEP23	10L	**Java Programming Lab**	10L	**TERM-I** I. To find the sum of any number of integers entered as command line arguments II. To find the factorial of a given number III. To learn use of single dimensional array by defining the array dynamically. IV. To learn use of lenth in case of a two dimensional array V. To convert a decimal to binary number VI. To check if a number is prime or not, by taking the number as input from the keyboard.

OCT23	10L		10L	**TERM-II** I. To find the sum of any number of integers interactively, i.e., entering every number from thekeyboard, whereas the total number of integers is given as a command line argument II. Write a program that show working of different functions of String and String Buffer classs like setCharat (set Length (), append (), insert (), concat ()and equals (). III. Write a program to create a class with methods where distance is computed in terms of feet andinches, how to create objects of a class and to see the use of this pointer IV. Modify the class by creating constructor for assigning values (feet and inches) to the distanceobject. Create another object and assign second object as reference variable to another object referencevariable. Further create a third object which is a clone of the first object. V. Write a program to show that during function overloading, if no matching argument is found, thenjava will apply automatic type conversions(from lower to higher data type) VI. Write a program to show the difference between public and private access specifiers. The programshould also show that primitive data types are passed by value and objects are passed by reference andto learn use of final keyword.
NOV23	10L		10L	**TERM-III**

DEC23	10L		10L	I . Write a program to show the use of static functions and to pass variable length arguments in afunction. II .Write a program to demonstrate the concept of boxing and unboxing. III . Create a multi-file program where in one file a string message is taken as input from the user andthe function to display the message on the screen is given in another file (make use of Scanner packagein this program). IV . Write a program to create a multilevel package and also creates a reusable class to generateFibonacci series, where the function to generate fibonacii series is given in a different file belonging tothe same package. V. Write a program that creates illustrates different levels of protection in classes/subclassesbelonging to same package or different packages VI . Write a program that takes two numbers a and b as input, computes a/b, and invokes ArithmeticException to generate a message when the denominator is zero. **TERM-IV** I. Write a program to show the use of nested try statements that emphasizes the sequence ofchecking for catch handler statements. II. Write a program to create your own exception types to handle situation specific to yourapplication (Hint: Define a subclass of Exception which itself is a subclass of Throwable).

				III. Write a program to demonstrate priorities among multiple threads. IV. Write a program to demonstrate multithread communication by implementing synchronizationamong threads (Hint: you can implement a simple producer and consumer problem). V. Write a program to create URL object, create a URL Connection using the openConnection () method and then use it examine the different components of the URL and content. VI. 24. Write a program to implement a simple datagram client and server in which a message that istyped into the server window is sent to the client side where it is displayed.
JAN24	10L		10L	**TERM-V** I. Write a program that creates a Banner and then creates a thread to scrolls the message inthe banner from left to right across the applet‘s window. II. Write a program to get the URL/location of code (i.e. java code) and document (i.e. html file). III. Write a program to demonstrate different mouse handling events like mouse Clicked (), mouseEntered (), mouse Exited (), mouse Pressed, mouse Released () and mouseDragged ().

				IV. Write a program to demonstrate different keyboard handling events. V. Write a program to generate a window without an applet window using main () function. VI. Write a program to demonstrate the use of push buttons.

Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department: ……BCA……

Name of the teacher:……**ASHIS DEY**…

Stream: ……BCA……

Paper code: … - - **BCADSE2.3 T: Internet on Things (IoT)**

Teaching plan for 5th semester students				
Syllabus allotted			**Paper - BCADSE2.3 T: Internet on Things (IoT)**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
SEP-23	10L	**Internet on Things (IoT)**	10L	**TERM-I Introduction to IOT:** Defining IOT, Characteristics of IOT, Physical design of IOT, Logical design of IOT, Communication models of APIs, Functional blocks of IOT. **TERM-II IOT Architecture:**
OCT-23	10L		10L	M2M, Web of Things, IOT Protocol Architectures, IOT Protocols, The 6LowPAN, SDN **TERM-III IOT Platform Overview:**
NOV-23	10L		10L	Hardware Platform: Raspberry pi, ARM Cortexprocessors, Arduino Intel Galileo boards, Introduction to cloud computing and Fog computing.

DEC-23 TO JAN-24	20L		20L	**TERM-III Developing IOTs:** Introduction to Python, IOT tools, developing applications through IOT tools. Implementing IOT concepts with Python. Case Study & Advanced IOT Application: IOT application in home infrastructures, Building security, Industries, Home applications etc. Use of Big data and Visualization in IOT, Industry 4.0 concepts.

Silda Chandrasekhar College

Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department: ……BCA……

Name of the teacher: **Debasish Bera**

Stream: …BCA……

Paper code: … **- BCADSE2.1T: Mobile Computing**

Teaching plan for 5th semester students				
Syllabus allotted			**Paper - BCADSE2.1T: Mobile Computing**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
SEP-23	10L	**Mobile Computing**	10L	**TERM-I Introduction:** Introduction to wireless networks and mobile computing – Characteristics, Issues andchallenges.
OCT-23	10L		10L	**TERM-II Wireless Transmission:**Fundamentals of wireless transmission - Medium Access Control Protocols,
NOV-23	10L		10L	Different types of multiple access techniques and their characteristics. **TERM-III Cellular Communication:**Cellular concept, Overview of different Generations.
NOV-23	10L		10L	**TERM-IV Mobile:** Mobile IP, Mobile transport layer - Mechanisms for improving TCP performances on
DEC-23	10L		10L	wireless links, , Overview of Security in mobile environments.

JAN-24	10L		10L	**TERM-V Wireless:** Overview of Wireless LAN IEEE 802.11 series, Overview of Bluetooth, Overview of Wireless Sensor Networks. **TERM-VI Wireless application Environments:** WAP, WML, Push Architecture, Push/Pull Services Mobile Adhoc Networks – Characteristics, Routing protocols.

Silda Chandrasekhar College

Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department: …BCA……

Name of the teacher: **BISWESWAR BERA**

Stream: ……BCA……

Paper code: **BCACC11T: Artificial Intelligence** Major/Minor

Syllabus allotted			**Paper - BCACC11T: Artificial Intelligence**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
SEP-23 OCT-24 NOV-23 DEC-23 JAN-24	10L 10L 1OL 10L 10L	**Artificial Intelligence**	10L 10L 10L 10L 10L	**TERM-IIntroduction:** Introduction to Artificial Intelligence, Background and Applications, Turing Test and Rational Agent approaches to AI, Introduction to Intelligent Agents, their structure, behaviour and environment. **TERM-II Problem Solving and Searching Techniques:** Problem Characteristics, Production Systems, Control Strategies, Breadth First Search, Depth First Search, Hill climbing and its Variations, Heuristics Search Techniques: Best First Search, A* algorithm, Constraint Satisfaction Problem, Means-End Analysis, Introduction to Game Playing, Min-Max and Alpha-Beta pruning algorithms. **TERM-III Knowledge Representation**: Introduction to First Order Predicate Logic, Resolution Principle, Unification, Semantic Nets, Conceptual Dependencies, Frames, and Scripts, Production Rules, Conceptual Graphs. Programming in Logic (PROLOG) **TERM-IV Dealing with Uncertainty and Inconsistencies:** Truth Maintenance System, Default Reasoning, Probabilistic Reasoning, Bayesian Probabilistic

				Inference, Possible World Representations. **TERM-V Understanding Natural Languages:** Parsing Techniques, Context-Free and Transformational Grammars, Recursive and Augmented Transition Nets

Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department: …BCA……

Name of the teacher: **BISWESWAR BERA**

Stream: ……BCA……

Paper code: …… **BCACC11P: Artificial Intelligence Lab** ……

Teaching plan for 5th semester students				
Syllabus allotted			**Paper - BCACC11P: Artificial Intelligence Lab**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
SEP-23	10L	**Artificial Intelligence Lab**	10L	**TERM-I** I. Write a prolog program to calculate the sum of two numbers. II. Write a prolog program to find the maximum of two numbers. III. Write a prolog program to calculate the factorial of a given number. IV. Write a prolog program to calculate the nth Fibonacci number. **TERM-II**
OCT-23	10L		10L	I. Write a prolog program, insert_nth(item, n, into_list, result) that asserts that result is the listinto_list with item

				inserted as the n‘th element into every list at all levels. II. Write a Prolog program to remove the Nth item from a list. III. Write a Prolog program, remove-nth(Before, After) that asserts the After list is the Before listwith the removal of every n‘th item from every list at all levels. IV. Write a Prolog program to implement append for two lists. **TERM-III**
NOV-23	10L		10L	I. Write a Prolog program to implement palindrome(List). II. Write a Prolog program to implement max(X,Y,Max) so that Max is the greater of twonumbers X and Y. III. Write a Prolog program to implement maxlist(List,Max) so that Max is the greatest number in the list of numbers List. IV. Write a Prolog program to implement sumlist(List,Sum) so that Sum is the sum of a given list ofnumbers List. **TERM-IV**
DEC-23	20L		20L	I. Write a Prolog program to implement two predicates evenlength(List) and oddlength(List) so thatthey are true if their argument is a list of even or odd length respectively. II. Write a Prolog program to

TO JAN-24				implement reverse(List,ReversedList) that reverses lists. III. Write a Prolog program to implement maxlist(List,Max) so that Max is the greatest number in thelist of numbers List using cut predicate. IV. Write a Prolog program to implement GCD of two numbers. V. Write a prolog program that implements Semantic Networks/Frame Structures

Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department: …BCA……

Name of the teacher: **BISWESWAR BERA**

Stream: ……BCA……

Paper code: …… **BCADSE1.2T: PHP & .NET**

Teaching plan for 5th semester students				
Syllabus allotted			**Paper - BCADSE1.2T: PHP & .NET**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
SEP-23 TO OCT-23	20L	**PHP & .NET**	20L	**TERM-I Introduction to PHP:** • PHP introduction, inventions and versions, important tools and software requirements (like • Web Server, Database,

NOV-23 TO DEC-23	20L		20L	Editors etc.) • PHP with other technologies, scope of PHP • Basic Syntax, PHP variables and constants • Types of data in PHP , Expressions, scopes of a variable (local, global) • PHP Operators : Arithmetic, Assignment, Relational , Logical operators, Bitwise , ternary and MOD operator. • PHP operator Precedence and associativity **TERM-IIHandling HTML form with PHP:** • Capturing Form Data • GET and POST form methods • Dealing with multi value fields • Redirecting a form after submission • PHP conditional events and Loops: • PHP IF Else conditional statements (Nested IF and Else) • Switch case, while ,For and Do While Loop • Goto , Break ,Continue and exit **TERM-IIIPHP Functions:**
JAN-23	10L		10L	

				• Function, Need of Function , declaration and calling of a function • PHP Function with arguments, Default Arguments in Function • Function argument with call by value, call by reference • Scope of Function Global and Local

Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department: …BCA……

Name of the teacher: **BISWESWAR BERA**

Stream: ……BCA……

Paper code: …… **BCACC12T: Theory of Computer Science**

Syllabus allotted			**Paper - BCACC12T: Theory of Computer Science**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
SEM-23 OCT-23 NOV-	10L 10L 10L	**Theory of Computer Science**	10L 10L 1OL	**TERM I** **Languages:** Alphabets, string, language, Basic Operations on language, Concatenation, KleeneStar **TERM-2 Finite Automata and Regular Languages:**Regular Expressions, Transition Graphs, Deterministic and non-deterministic finite automata, NFA to DFA Conversion, Regular languages and

23 DEC-23 TO JAN-24	20L			their relationship with finite automata, Pumping lemma and closure properties of regularlanguages. **TERM-III Context free languages and PDA:** Context free grammars, parse trees, ambiguities in grammarsand languages, Pushdown automata (Deterministic and Non-deterministic), Pumping Lemma,Properties of context free languages, normal forms. **TERM-IV Turing Machines and Models of Computations:** Turing Machine as a model of computation, Universal Turing Machine, Language acceptability, decidability, halting problem, Recursively enumerable and recursive language unsolved problems .

Silda Chandrasekhar College

Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department of **BCA**

Name of the teacher: **Ashis Dey & Bisweswar Bera**

Stream: BCA

Paper code: Digital Electronics**(T+P) (**BCAHMJ102**)**Major/~~Minor~~

Teaching plan for 2nd semester students				
Syllabus allotted			**Paper - Digital Electronics (T+P) (BCAHMJ102) Major/~~Minor~~**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
Sep-2023	10L		10L	**Module-I Number systems:** Positional number systems; Binary, Octal, Hexadecimal and Decimal number systems; conversion of a number in one system to the other; Representation of signed numbers- signed magnitude, one's complement, 2's complement representation techniques, Merits of 2's complement representation scheme; Various binary codes- BCD, excess -3, Gray code, ASCII, EBCDIC, Parity bits; Binary arithmeticaddition, subtraction, multiplication and division of unsigned binary numbers.

Sep-2023	10L	**Major-1** **Digital Electronics (T+P)**	10L	**Module-II Boolean algebra:** Fundamental of Boolean Expression: Definition of Switching Algebra, Basic properties of Switching Algebra, Huntington's Postulates, Basic Logic gates: (OR, AND, NOT); Universal Logic Gates: (NAND & NOR); Basic logic operations: logical sum (OR), logical product (AND), complementation (NOT), Anti coincidence (EX-OR) and coincidence (EX-NOR) operations: Truth tables of Basic gates; Boolean Variables and Expressions; De-Morgan's theorem; Boolean expressions Simplification- Algebraic technique, Karnaugh map technique, 3 variable and 4 variable Karnaugh map.
Nov-2023	13L		13L	**Module-III Combinational Circuits:** Half Adder, Full Adder (3-bit), Half Subtractor, Full Subtractor (3-bit) and construction using Basic Logic Gates (OR, AND, NOT) and Universal Logic Gates (NAND & NOR), Multiplexer, Encoders, Demultiplexer and Decoder circuits, Seven Segment Display. BCD adder/ subtract or comparator; parity generators, code converters, priority encoders.
			Internal Assessment	
Dec-2023	12L		12L	**Module-IV Sequential Circuits:** Latch, RS, D, JK, T Flip Flops; Race condition, Master Slave JK Flip Flop; Registers: Serial Input Serial Output (SISO), Serial Input Parallel Output (SIPO), Parallel input Serial Output (PISO), Parallel Input parallel Output (PIPO), Universal Shift Registers; Counters: Asynchronous Counter, Synchronous Counter
SEP-23 & NOV-23	15L		15L	MJ-2P: Digital Electronics **Combinational Circuits & Sequential Circuits:** 1. Implementation of different functions using Basic and Universal Logic gates, SOP, POS 2. Study and prove De-Morgan's Theorem. 3. Implementation of Basic gates using NAND and NOR gates 4. Implementation of half and Full Adder (3-

DEC-23 To JAN-24				bit) using basic logic gates and Universal logic gates (NAND & NOR) 5. Implementation of half and Full Subtractor (3-bit) using basic logic gates and Universal logic gates (NAND & NOR). 6. Design 2 to 4 decoder using basic / universal logic gates. 7. Design and implement a 8:1 multiplexer. 8. Design and implement a 3×8 decoder. 9. Design and implement a 8 bit parity generator. 10. Design and implement a D flip-flop. 11. Design and implement a J. K. flip-flop. 12. Design and implement a 4-bit synchronous counter.
Jan-2024-Feb-2024			**Revision and preparation for university exam**	

Silda Chandrasekhar College

Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department of **BCA**

Name of the teacher:**Ashis Dey**

Stream: BCA

Paper code: XML Programming (BCASEC02**), SEC**

Teaching plan for 2nd semester students				
Syllabus allotted			**Paper -** XML Programming (BCASEC02**), SEC**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
Sep-2023	4L	**SEC** XML Programming	4L	**Exercise 1: Information Structure** In this exercise, student will practice identifying the structure of an information object. For the sample document provided below: Label the information structures you see, including containing structures. Draw a tree representation of the structure.
Sep-2023-Nov-2023	10L		10L	**Exercise 2: Deconstructing an XML Document** In this exercise, student will practice identifying the explicit structure within an XML document. In asense, this is the reverse of what you did in Exercise 1. For the sample XML markup below, create a document-like representation (or a simple drawing) for the content contained within the XML tags: <book> <coverInfo> <title>The XML Handbook</title> <author>Charles F. Gold farb</author>

				<author>Paul Prescod</author> <edition>Second</edition <description>The definitive XML resource: applications, products, and technologies. Revised and expanded— over600 new pages. </description> </coverInfo> </book>
Dec-2023	4L		4L	**Exercise 3: Creating XML Markup** In this exercise, create some XML markup based on the tree representation from Exercise#1 above, and the content from the original sample document.
			Internal Assessment	
Jan-2024	7L		7L	**Exercise 4: Well-Formedness** This exercise checks your understanding of the constraints for well-formedness. Are the following document instances well-formed? Explain any One answers. <list><title>The first list</title><item>An item</list> <item>An item</item><item>Another item</item> <para>Bathing a cat is a <emph>relatively</emph>easy task as long as the cat is willing.</para> <bibl><title>How to Bathe a Cat<author></title>Merlin Bauer<author></bibl>
				Exercise 5: Well-Formedness This exercise is a bit more challenging

				than the previous example. Here is a fragment of an XML document instance. Identify all the places where it fails to match the constraints for well-formedness. <PROCEDURE><TITLE How to Bath a Cat</TITLE> <OVERVIEW> This procedure tells you how to bathe a cat. <WARNING></OVERVIEW>Cats don't like to take baths. You could get hurt doing this. Be sure to obtain all the required protective gear before you start. </WARNING><EQUIPEMENT><ITEM >HockeyMask<ITEM>PaddedFullbodyKevlarArmor</ITEM><ITEM>Tubfullofwarmwater</ITEM><ITEM>Towels</ITEM><ITEM>Firs tAidkit</ITEM><ITEM>CatShampoo</ITEM><EQUIPMENT><INSTRUCTIONS><STEP> Locate the cat, who by no wishiding under the bed.</STEP><STEP>Place the cat in the tub of water.</STEP><ITEM> Using the First Aid kit, repair the damage to your head and arms.</STEP><STEP>Place the cat back in the tub and hold it down.</STEP><STEP>Wash it really ast, then make an effort to dry it with the towels.</STEP><STEP>Decide not to do this again.</STEP> </INSTRUCTIONS> .
Jan-2024-Feb-2024			**Revision and preparation for university exam**	

Silda Chandrasekhar College

Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department of **BCA**

Name of the teacher:**Debasish Bera**

Stream: BCA

Paper code: Digital Technologies **(MDC02), MDC**

Teaching plan for 2nd semester students				
Syllabus allotted			**Paper -** Digital Technologies **(MDC02), MDC**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
Sep-2023	4L	**MDC** Digital Technologies	4L	**Unit-I:** Introduction and Evolution of Digital systems, Role and significance of Digital Technology, Information & communication technology & tools, Computer system & it's working, Software and its types, Operating Systems: types and functions. Communication systems: Principles, model & transmission media, Computer networks, Internet: concept and applications, WWW, Web Browsers, search engines, Messaging, e-mail, social networking.
Nov-2023-Dec-2023	4L		4L	Unit- II: Computer Based Information system: significance and types, e-Commerce & digital marketing: basic concepts, benefits & challenges. Digital India & e-Governance: Initiatives, Infrastructure, Services and Empowerment. Digital financial tools: Unified Payment Interface, Aadhaar enabled payment System, USSD, Credit/Debit Cards, e-Wallets, Internet banking, NEFT/RTGS and IMPS, Online Bill Payments and PoS, Cyber Security: Threats, Significance, Challenges, Precautions, safety Measures &Tools,.

			Internal Assessment	
Sep-2023-Oct-2023	5L		5L	Unit- III: Emerging Technologies & their applications: Overview of Cloud Computing, Big Data, Internet of things, Virtual reality, Block chain, robotics, Artificial intelligence, 3D Printing, Future of digital technologies.
Jan-2024-Feb-2024			**Revision and preparation for university exam**	

Silda Chandrasekhar College
Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department of**BCA**

Name of the teacher:**Debasish Bera**

Stream: BCA

Paper code: Computer Fundamental**(BCAMI02)**~~Major~~/Minor

Teaching plan for 2nd semester students				
Syllabus allotted			**Paper -** Computer Fundamental **(BCAMI02)**~~Major~~/Minor	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
Sep-2023	15L	**Minor-1** Computer Fundamental	15L	**MODULE- I: Introduction** Definition of computer.Characteristics of computer.Generation of computer. Classificationof computer (Micro, Mini, Mainframe, Super), Application of computer, Basic concept aboutSoftware& Hardware, Bit, Byte, Word Nibble, Computer Languages (Low, High & assembly LevelLanguage)
Sep-2023-Oct-2023				**MODULE-II: Basic Components of Computer** Basic organization of digital computer (CPU, CU, ALU, Register set, Communication Path way, Input / Output Devices, Memory Module).CPU: Basic explanation about CU, ALU &Register set as well as all over CPU. Communication Pathway: Definition of Bus, Internal &External Bus,Control, Address & Data Bus. Input devices: Keyboard, Pointing

	15L		15L	device, handheld device, Opticaldevice, Audio visual device. Output device: Soft copy devices & hard copy devices. MemoryHierarchy (Definition, function, classification, Advantages & Disadvantages): Primary Memory, Secondary Memory, Cache Memory, Virtual Memory
Nov-2023-Dec-2023	15L		15L	**MODULE-III: Number System** Definition, Positional & non positional number system, Binary,Decimal, octal & hexadecimal number system, Conversion between them, Binary-Decimal-Octal Hexadecimal arithmetic, Signed & Unsigned number, Complement notation (r's & (r-1)'s complement), Addition &Subtraction operation using complement notation, Floating point representation of number, Computer codes(Weighted binary codes (BCD 8421/2421,Reflective, sequential), Non-weighted binary codes(Excess-3, Gray), Error detecting & correcting codes, Alphanumeric codes(ASCII, EBCDIC, Hollerith),BCDaddition, Gray to Binary & Binary to Gray conversion
			Internal Assessment	
Dec-2023-Jan-2024	15L		15L	**MODULE-IV: Data communication and Computer network** Definition of data communication, Characteristics of data communication, Component of data communication, mode of dataCommunication, Media of data communication (guided & unguided), Channel capacity.Computer Network: Definition, Network topology (Bus, Ring, Star, Mesh, Tree,Hybrid), Types of networks (LAN, MAN, WAN, CCAN, PAN), Network devices (Hub, Repeater, Switch, Bridge, Router,Gateway), Basic idea about e-mail, Search engines, Chatting, Internetconferencing,Intranet.

				MODULE-V: Operating System Definition of OS, Function of OS, Need of OS, Classification of OS(CUI & GUI, Single user, Multi User), Concept of Multi Programming, Multi Tasking& Multi Processing.Booting Process), Basic Concept of Assembler, Loader, Linker, Interpreter.
Jan-2024-Feb-2024			**Revision and preparation for university exam**	

Silda Chandrasekhar College

Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department of **BCA**

Name of the teacher: **Ashis Dey**

Stream: BCA

Paper code: **BCACC8T: Computer Networking (T+P)** Major/~~Minor~~

Teaching plan for 4th semester students				
Syllabus allotted			**Paper - BCACC8T: Computer Networking ,Major/~~Minor~~**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
Sep-2023	15L	**Major-1 BCACC8T: Computer Networking (T+P)**	15L	**Module-I:Introduction to Data Communications and Network Models:** Protocols and Standards, Layers in OSI Models, Analog and Digital Signals, Transmission Modes, Transmission Impairment, Data Rate Limits, Performance, Digital Transmission, Network Devices & Drivers: Router, Modem, Repeater, Hub, Switch, Bridge (fundamental concepts only).
Sep-2023	15L		15L	**Module-II :Signal Conversion:** Digital-to-Digital Conversion, Analog-to-Digital Conversion, Digital-to analog Conversion, Analogto- analog Conversion. Transmission Media: Guided Media, Unguided Media, Switching Techniques: Packet Switching, Circuit Switching, Datagram Networks, Virtual-Circuit Networks, and Structure of a Switch.
Nov-2023	15L		15L	**Module-III Error Detection and Correction:** Checksum, CRC, Data Link Control: Framing,

				Flow and Error Control, Noiseless Channels, Noisy channels, (Stop and Wait ARQ, Sliding window Protocol, Go Back N, Selective Repeat) HDLC, Point-to-Point Protocol. Access Control: TDM, CSMA/CD, and Channelization (FDMA, TDMA, and CDMA).
			Internal Assessment	
Dec-2023	15L		15L	**Module-IV Network Layer:** Logical Addressing, IPv4 Addresses, IPv6 Addresses, Virtual-Circuit Networks: Frame Relay and ATM, Transport Layer: Process-Process Delivery: UDP, TCP. **Application layers:** DNS, SMTP, POP, FTP, HTTP, Basics of WiFi (Fundamental concepts only), **Network Security:** Authentication, Basics of Public Key and Private Key, Digital Signatures and Certificates (Fundamental concepts only).
SEP-23 & NOV-23 DEC-23 To JAN-24	15L 15L		15L 15L	**BCACC8P: Networking Lab** **Use C/C++/ any Network Simulator** 1. Simulate Even Parity generator and checker. 2. Simulate two-dimensional Parity generator and checker. 3. Simulate checksum generator and checker. 4. Simulate Hamming code method. 5. Simulate Cyclic Redundancy Check (CRC) error detection algorithm for noisy channel. 6. Simulate and implement stop and wait protocol for noisy channel. 7. Simulate and implement go back n sliding window protocol. 8. Simulate and implement selective repeat sliding window protocol. 9. Simulate and implement distance vector routing algorithm.
Jan-2024-Feb-2024			**Revision and preparation for university exam**	

Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department of **BCA**

Name of the teacher: **Ashis Dey**

Stream: BCA

Paper code: **BCACC10T: Database Management System**

<table>
<tr><th colspan="5">Teaching plan for 4th semester students</th></tr>
<tr><th colspan="3">Syllabus allotted</th><th colspan="2">Paper - BCACC10T: Database Management System</th></tr>
<tr><th>Month</th><th>Expected number of classes</th><th>Paper</th><th>Number of Lectures</th><th>Topics to be covered</th></tr>
<tr><td>Sep-2023</td><td>10L</td><td rowspan="4">BCACC10T: Database Management System</td><td>10L</td><td>MODULE- I: Introduction:
Introduction to Database and Database Users, Database System Concepts and Architecture: data
Models, schema, and instances</td></tr>
<tr><td>Sep-2023-Oct-2023</td><td>15L</td><td>15L</td><td>MODULE-II: Conceptual Modeling and Database Design:
Entity Relationship (ER) Model: Entity Types, Entity Sets, Attributes, Keys, Relationship Types,
Relationship Sets, Roles and Structural Constraints, Weak Entity Types, ER Naming Conventions.
Enhanced Entity-Relationship (EER) Model.</td></tr>
<tr><td>Nov-2023-Dec-2023</td><td>15L</td><td>15L</td><td>MODULE-III: Normalization:
Functional Dependencies, Normal Forms based on Primary Keys, Second and third Normal Forms,
Boyce-Code Normal Form, Multivalued Dependency and Fourth Normal Form, Join Dependencies
and Fifth Normal Form.</td></tr>
<tr><td colspan="2"></td><td colspan="2">Internal Assessment</td></tr>
</table>

Dec-2023-	10L		10L	**MODULE-IV: Structure Query Language (SQL):** Relational Model Concepts, Basic SQLs, SQL Data Definition and Data types, Constraints in SQL, Retrieval Queries in SQL, INSERT, DELETE, UPDATE Statements in SQL, Relational Algebra and Relational Calculus: Unary Relational Operations: SELECT and PROJECT, Binary Relation: JOIN and DIVISION.
Jan-2024				**MODULE-V: Transaction Processing:** Introduction to Transaction Processing, Transaction and System Concepts, Properties of Transactions, Recoverability, Serializability, Concurrency Control Techniques, Locking techniques for Concurrency Control, Concurrency Control based on Time-Stamp Ordering.
SEP-23 & NOV-23 DEC-	15L		15L	**BCACC10P: Database Management System Lab ,**Credit 02 **Query List** 1. Query to display Employee Name, Job, Hire Date, Employee Number; for each employee with the Employee Number appearing first. 2. Query to display unique Jobs from the Employee Table. 3. Query to display the Employee Name concatenated by a Job separated by a comma. 4. Query to display all the data from the Employee Table. Separate each Column by a comma and name the said column as THE_OUTPUT. 5. Query to display the Employee Name and Salary of all the employees earning more than $2850. 6. Query to display Employee Name and Department Number for the Employee No= 7900. 7. Query to display Employee Name and Salary for all employees whose salary is not in the range of Rs.1500 and Rs.2850. 8. Query to display Employee Name and Department No. of all the employees in Dept 10 and Dept 30 in the alphabetical order by name. 9. Query to display Name and Hire Date of every Employee who was hired in 1981. 10. Query to display Name and Job of all

23 To JAN-24	15L		15L	employees who don't have a current Manager. 11. Query to display the Name, Salary and Commission for all the employees who earn commission. 12. Sort the data in descending order of Salary and Commission. 13. Query to display Name of all the employees where the third letter of their name is 'A'. 14. Query to display Name of all employees either have two 'R's or have two 'A's in their name and are either in Dept No = 30 or their Mangers Employee No = 7788. 15. Query to display Name, Salary and Commission for all employees whose Commission Amount is 14 greater than their Salary increased by 5%. 16. Query to display the Current Date. 17. Query to display Name, Hire Date and Salary Review Date which is the 1st Monday after six months of employment.
Feb-2024			**Revision and preparation for university exam**	

Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department of **BCA**

Name of the teacher: **Ashis Dey**

Stream: BCA

Paper code: **BCASEC2.2T: Python Programming**

Teaching plan for 4th semester students				
Syllabus allotted			**Paper - BCASEC2.2T: Python Programming**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
Sep-2023	5L	**BCASEC2.2T : Python Programming**	5L	**MODULE- I: UNIT-I Overview of Programming:** Structure of a Python Program, Elements of Python
Oct-2023	5L		5L	**MODULE-II: Introduction to Python:** Python Interpreter, Using Python as calculator, Python shell, Indentation. Atoms, Identifiers and keywords, Literals, Strings, Operators (Arithmetic operator, Relational operator, Logical or Boolean operator, Assignment, Operator, Ternary operator, Bit wise operator, Increment or Decrement operator)
Nov-2023	5L		5L	**MODULE-III: Creating Python Programs:** Input and Output Statements, Control statements (Branching, Looping, Conditional Statement, Exit function, Difference between break, continue and pass.), Defining Functions, default arguments
			Internal Assessment	
Dec-2023-JAN-24	15L		15L	**BCASEC2.2P: Python Programming Lab** Credit 01 1. Write a menu driven program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon users choice. 2. Write a Program to calculate total marks, percentage and grade of a student. Marks obtained in each of the three subjects are to be input by

				the user. Assign grades according to the following criteria: Grade A: Percentage >=80 Grade B: Percentage>=70 and <80 Grade C: Percentage>=60 and <70 Grade D: Percentage>=40 and <60 Grade E: Percentage<40 3. Write a menu-driven program, using user-defined functions to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user. 4. Write a Program to display the first n terms of Fibonacci series. 5. Write a Program to find factorial of the given number. 6. Write a Program to find sum of the following series for n terms: 1 – 2/2! + 3/3! - - - - - n/n! 7. Write a Program to calculate the sum and product of two compatible matrices.
Feb-2024			**Revision and preparation for university exam**	

Silda Chandrasekhar College

Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department of **BCA**

Name of the teacher: **Bisweswar Bera**

Stream: BCA

Paper code: **BCACC9T: Computer Architecture & Microprocessor**

Teaching plan for 4th semester students				
Syllabus allotted			**Paper - BCACC9T: Computer Architecture & Microprocessor**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
Sep-2023	15L	**BCACC9T: Computer Architecture & Microprocessor**	15L	**Module-I: Basic Computer Architecture: Introduction:** History of Computer architecture, Overview of computer organization, Memory Hierarchy and cache, Organization of hard disk. Instruction Codes: Stored Program Organization-Indirect Address, Computer Registers, Common bus system, Instruction set, Timing and Control-Instruction Cycle
Sep-2023-Nov-2023	15L		15L	**Module-II :Central Processing Unit:** Basic Computer Design of Accumulator: Control of Ac Register, ALU Organization; Control Memory-Address Sequencing; Conditional Branching, Mapping of Instruction-Subroutines; Hardware and Microprogram Control Unit. General Register Organization: Control Word, Stack Organization and Instruction; Formats-Addressing Models.
				Module-III: Fundamental of Microprocessor:

Dec-2023	15L		15L	Introduction to Microprocessors, Microprocessor systems with bus organization, Microprocessor architecture and operation, 8085 Microprocessor and its operation, 8085 instruction cycle, machine cycle, T states, Addressing modes in 8085
			Internal Assessment	
Jan-2024	15L		15L	**Module-IV: Introduction to Assembly Language Programming:** Assembly Language Programming Basics, Classification of Instructions and Addressing Mode, 8085 Instruction Sets, Assembling, Executing and Debugging the Programs, Developing Counters and Time Delay Routines, Interfacing Concepts
SEP-23 & NOV-23	15L		15L	**BCACC9P: Architecture & Microprocessor** Lab Credit 02 1. Write a program for 32-bit binary division and multiplication 2. Write a program for 32-bit BCD addition and subtraction 3. Write a program for linear search and binary search. 4. Write a program to add and subtract two arrays 5. Write a program for binary to ascii conversion 6. Write a program for ascii to binary conversion 7. To write an ALP program to display the keyboard status using 8086. 8. To write an ALP program for displaying the Digital clock. 9. To write and implement the program for stepper motor using 8085 10. To write a program to Print RAM size and system date using 8086. 11. To write an ALP program for password checking using 8086. 12. To write a Program using 8086 for Copying 12 Bytes of Data from Source to Destination & Verify. 13. To search the character in a string using 8086 14. To sort the given number in ascending order using 8086. 15. To convert a given binary to BCD. 16. To write an assembly language program to convert an 8 bit binary data to BCD using 8085 microprocessor kit.
DEC-23 To JAN-24	15L		15L	
Jan-2024-Feb-2024			**Revision and preparation for university exam**	

Silda Chandrasekhar College

Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department of **BCA**

Name of the teacher:**Debasish Bera**

Stream: BCA

Paper code: **BCAGE4.2T: Digital Marketing Fundamentals**

<table>
<tr><th colspan="5">Teaching plan for 4th semester students</th></tr>
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<tr><td>Month</td><td>Expected number of classes</td><td>Paper</td><td>Number of Lectures</td><td>Topics to be covered</td></tr>
<tr><td>Sep-2023</td><td>15L</td><td rowspan="3">BCAGE4.2T : Digital Marketing Fundamentals</td><td>15L</td><td>Unit-I: Fundamentals of Digital Marketing
Marketing in the digital world; Integrated marketing- The Phygital; Global trends in Digital
Marketing; Digital channels- Paid, Owned and Earn; Fundamentals on the primary asset- your website; Careers in digital marketing; Skill development in digital marketing</td></tr>
<tr><td rowspan="2">Nov-2023-Dec-2023</td><td rowspan="2">20L</td><td>20L</td><td>Unit- II: AdWords Fundamentals
Understanding Pay-per-click Advertisement; Significance and evolution of AdWords in PPC Bing
Ads V/s Google Ads- overview; AdWords Certification- Overview, Benefits and Preparation;
Google Ad Networks; Different Ad Formats; Keywords - significance and planning; Using Keyword Planner and other tools; Keyword matches and their usage; Campaign Structure and
Organisation Quality, Rank and Relevance of Ads.</td></tr>
<tr><td colspan="2">Internal Assessment</td></tr>
</table>

JAN-2024	25L		25L	Unit- III: **Search & Display Advertising with Adwords** **Search with Adwords** Keywords - planning, matching and combination; Specifications of an Ad and how to put it to good use; Managing Invalid Clicks; Ad extensions and usage; Dynamic search ads; Landing page - your virtual front; Campaign Experiment; Opportunities Tab; AdWords APIs; AdWords editor- Benefits and usage; Managing multiple accounts **Display with Adwords** Google Display Network and Partnerships; Double Click Ad Exchange and AdSense Campaign Creation and Structuring for display; Keyword and targeting through display network; Campaign Metrics, Analysis and optimization
FEB-24	20L		20L	Unit- IV: **SEO Advance Concepts** Major Google updates and their implications on SEO; Using Search Console for SEO; KPIs of SEO; Tools for SEO; Moz SEO Products; SEMrushCompetitive Research and Business Intelligence Software; Competition Analysis for SEO; Overall planning for SEO; Understanding nuances of local and international SEO; Accelerated mobile pages and SEO
Feb-2024		**5L**	**Revision and preparation for university exam**	

Silda Chandrasekhar College

Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department: ……BCA……

Name of the teacher:……ASHIS DEY…….

Stream: …BCA……

Paper code: …cc-14T/ CC-14P/**DSE3.3 T**…… Major/Minor

Teaching plan for 6th semester students				
Syllabus allotted			**Paper - Core Course (CC) -14T**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
FEB-24 **MAR-24** **APR-24** **MAY24**	**10L** **10L** **10L**	**Software Engineering and Project Management**	**10L** **10L** **10L**	**TERM-I:** Overview of System Analysis &Design , Business System Concept, System Development Life Cycle, Waterfall Model , Spiral Model, Feasibility Analysis, Technical Feasibility, Cost- Benefit Analysis,COCOMO model. **TERM-II:** System Requirement Specification DFD, Data Dictionary, ER diagram, Process Organization &Interactions. [5L] System Design – Problem Partitioning, Top-Down And Bottom-Up design;Decision tree, decision table and structured English; Functional vs. Object-Oriented approach.Coding& Documentation - Documentation. **TERM-III:** Structured Programming, OO Programming, Information Hiding, Reuse, System Testing – Levels ofTesting, Integration Testing, Test case Specification, Reliability Assessment. , Validation &Verification Metrics, Monitoring & Control. **TERM-IV:** Software Project Management – Project Scheduling, Staffing, Software Configuration

TO JUNE24	**20L**		**20L**	Management, Quality Assurance, Project Monitoring.
		Software Project Management Lab		Sample Projects with SRS: 1. Criminal Record Management: Implement a criminal record management system for jailers, police officers and CBI officers 2. DTC Route Information: Online information about the bus routes and their frequency and fares 3. Car Pooling: To maintain a web based intranet application that enables the corporate employees within an organization to avail the facility of carpooling effectively. 4. Patient Appointment and Prescription Management System 5. Organized Retail Shopping Management Software 6. Online Hotel Reservation Service System 7. Examination and Result computation system 8. Automatic Internal Assessment System 24 9. Parking Allocation System 10. Wholesale Management System

Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department: ……BCA……

Name of the teacher:……ASHIS DEY……

Stream: …BCA……

Paper code: … **BCADSE3.3 T: Data Mining**

Syllabus allotted			**Paper - BCADSE3.3 T: Data Mining**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
FEB24	**10L**	**Data Mining**	**10L**	**TERM– I** **Introduction to Data Mining:** Introduction, what is Data Mining, Types of Data Mining, Advantages of Data Mining, disadvantagesof Data Mining,

MAR24 **APR24** **MAY24** **JUNE24**	**10L** **10L** **10L** **10L**		**10L** **10L** **10L** **10L**	Data Mining Applications, Challenges, Data Mining Techniques, KDD, Data MiningTasks, Data Pre-processing, Data Cleaning, Discretization, Measures of Similarity and Dissimilarity-Basics. **TERM– II** **Association Rules:** Problem Definition, Frequent Item Set Generation, The APRIORI Principle, Support and ConfidenceMeasures, Association Rule Generation; APRIOIRI Algorithm, The Partition Algorithms, FP-GrowthAlgorithms, Compact Representation of Frequent Item Set-Maximal Frequent Item Set, Closed Frequent Item Set. **TERM–III** **Classification**: General Approaches to solving a classification problem, Evaluation of Classifiers, Classificationtechniques, Decision Trees-Decision tree Construction, Algorithm for Decision tree Induction; Naive-Bayes Classifier; K- Nearest neighbour classification-Algorithm and Characteristics. **TERM–IV** **Clustering:** Problem Definition, Clustering Overview, Evaluation of Clustering Algorithms,PartitioningClustering-K-Means Algorithm, K-Means Additional issues, PAMAlgorithm;HierarchicalClustering-Agglomerative Methods and divisive methods, Basic Agglomerative ,HierarchicalClustering Algorithm, Specific techniques, Key Issues in Hierarchical Clustering, Strengths and Weakness; Outlier Detection. **TERM–V** **Web and Text Mining:** Introduction, web mining, web content

				mining, web structure mining, we usage mining, Text mining –unstructured text, episode rule discovery for texts, hierarchy of categories, text clustering.

Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department: ……BCA……

Name of the teacher:.……ASHIS DEY…….

Stream: …BCA……

Paper code: … **- BCACC13P**

Syllabus allotted			**Paper - BCACC13P**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
FEB-24	**10L**	**Graphics programing**	**10L**	**Term I** 01 Write a Program to draw basic graphics construction like line, circle, arc, ellipse and rectangle. 02 Write a Program to draw a line using DDA algorithm. 03 Write a Program to draw a line using Bresenham's Line Drawing algorithm. 04 Write a Program to draw a circle using mid-point algorithm. 05 Write a Program to draw a circle using Bresenham's circle drawing algorithm.
MAR-24	**10L**		**10L**	**Term-II** 06 Write a Program to draw an ellipse using mid-point algorithm. 07 Write a Program to draw an equilateral triangle without using any inbuilt functions. 08 Write a program to draw three concentric circle of different color using anycircle drawing algorithm without using any inbuilt functions. **Term III** 09 Write a Program to perform the following

APR-24 **MAY-24** **TO** **JUNE-24**	**10L** **20L**		**10L** **20L**	2D transformation on a triangle(menu driven program) i) Translation w.r.t an origin. ii) Rotation w.r.t an origin. iii) Scaling w.r.t an origin. 10 Write a Program to rotate a line about 45 with respect to origin. **Term-iv** 11 Write a Program to fill a rectangle using any standard filling algorithm. 12 Write a Program to implement Cohen-Sutherland line clipping algorithm. 13.write a program to apply various 3D transformations on a 3D object and then apply parallel andperspective projection on it. 14. Write a program to draw Hermite/Bezier curve.

Silda Chandrasekhar College

Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department: ……BCA……

Name of the teacher:…BISWESWAR BERA……

Stream: …BCA……

Paper code: …cc-13/**CC13P/DSE3.2 T**…… Major/Minor

Teaching plan for 6th semester students				
Syllabus allotted			**Paper - Computer Graphics**	
Month **FEB-24** **MAR-24** **TO** **APR-24**	**Expected number of class** **10L** **10L**	**Paper** **Computer Graphics**	**Number of Lectures** **10L** **10L**	**Term-I:** **Development of Computer Graphics**: Basic graphics system and standards, Rasterscan and random scan, graphics; Continual refresh and storages display, displayprocessors and character generator, Colour display techniques, Frame buffer andbit operations, concepts in raster graphics. **Term -II:** **Scan Conversion & Filling:** Points, Line and Curves; Scan Conversion; Line drawing algorithms; circle and ellipse generation; Polygon filling; Conic-section generation, Aliasing & Ant-aliasing

MAY-24	**10L**		**10L**	**Term -III:** **Two-dimensional viewing:** Basic transformations; Co-ordinatesystems; Windowing and Clipping; Segments; Interactive picture-constructiontechniques; interactive input-output device.
JUNE-24	**10L**		**10L**	**Term -IV:** **Three-dimensional Concepts:** 3-D representation and transformations;3-D viewing; Algorithm for 3-D volumes, spline curves ad surface; Fractals; Quadtree and oct-tree datastructures; Hidden line and surface rendering, and animation. ics to be covered

Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department: ……BCA……

Name of the teacher:…BISWESWAR BERA……

Stream: …BCA……

Paper code: …- **BCADSE3.2 T: Cloud Computing** ……

Syllabus allotted			**Paper - BCADSE3.2 T: Cloud Computing**	
Month	**Expected number of classes**	**Paper**	**Number of Lectures**	**Topics to be covered**
FEB24	**10L**	**Cloud Computing**	**10L**	**TERM-I** **Overview of Cloud Computing** Definition and essential characteristics of cloud computing; A brief history and evolution of cloud;Key considerations for cloud computing; Key cloud service providers and their services
MAR24	**10L**		**10L**	**TERM-II:** Cloud Computing Service and Deployment Models Overview of Cloud

				Service Models; Infrastructure-as-a-Service; Platform-as-a-Service; Software-as-a-Service; Public Cloud; PrivateCloud; Hybrid Cloud **TERM-III:**
APR24	**10L**		**10L**	Components of Cloud Computing Overview of Cloud Infrastructure; Virtualization and Virtual Machines ; Types of Virtual Machines; Bare Metal Servers; Secure Cloud Networking.
MAY24	**10L**		**10L**	**TERM IV:** Cloud Computing Storage and Content Delivery Networks Basics of Cloud Storage; FileStorage; Block Storage; Object Storage Overview Object Storage - Tiers and APIs; Content Delivery Networks
JUN24	**10L**		**10L**	**TERM V:** Emergent Trends, Cloud Native, DevOps, and Application Modernization Hybrid Multi-cloud; Microservices; Serverless Computing; Cloud Native DevOps on the Cloud;Application Modernization Cloud Security, Case Studies- What is Cloud Security; Identity and Access Management; Cloud Encryption Cloud Monitoring Basics and Benefits; Case Studies in GOOGLE CLOUD