MCM DAV College for Women, Sector – 36A, Chandigarh

Monthly Teaching Plans (Odd Semester/even semester)

Session – (2024-25)

Name of the Teacher Dr Indu Arora/Vandana Syal
Department Computer Science & Applications
Class **B.Sc I Semester I** ; Subject Computer Fundamentals and PC software
Paper Code –CSA-DSC-1(Maj/Min)-101

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	July 2024	Aug 2024	**UNIT - II: Introduction to Word Processing:** Opening, Creating, Saving, Printing and closing Documents, Using the Interface (Menu Toolbars), Editing Text (Copy, Delete, Move), Finding and Replacing Text, Spell Check, Autocorrect; Auto-text, Character formatting, Paragraph formatting, Page formatting. **Document Enhancement:** Inserting Pictures, Tables, inserting special characters, Adding Borders and shading, Adding Headers and Footers, numbering pages, setting up Multiple columns, Adjusting Margins and Hyphenating Documents, changing document views, Adding comments to a document, Tracking changes to a document. **Using styles and templates:** Applying, modifying and creating new (custom) styles; Creating a table of contents, creating indexes and bibliographies; **Mail Merge and Macros**: Creating Master Document and Data Source, Merging and printing Documents; Creating and using Macros, Creating fill-in forms. **UNIT-III: Introduction to Spreadsheets:** Worksheet overview, Row, Column, Cells, Ribbon, Tabs, Groups, Name Box and Formula Bar; Creating, Opening, Saving and printing worksheet; Speeding up data entry: using fill tool, fill series, defining fill series; working with Formulae, Data formatting (number formatting, date formatting),Working with Ranges, Absolute, relative and Mixed addressing; Viewing a spreadsheet: freezing rows and columns, splitting screen; creating, sorting and filtering Data Base; Creating and running Macros, Assigning shortcuts to Macros; **Working with sheets:** inserting new sheet, moving, deleting and renaming sheets	Lecture Method, PPT, Online Sources and demo in Practical notes from other books, discussion of the old question papers of covered topics
2	Sep 2024	Oct 202	**UNIT-III: Creating Charts**: Understanding Chart types, Creating Embedded Charts, formatting Charts: Changing Chart types, adding Titles, Legends and Gridlines, Printing Charts **Using Functions:** Statistical, financial, Mathematical, string, date and time. **UNIT-I: Introduction to Computers:** Characteristics of Computers, Functional Units of Computer System: CPU, registers, system bus, main memory unit, cache memory; Inside a computer: SMPS, Motherboard, Ports and Interfaces, expansion cards, ribbon cables, memory chips, processors **Data Representation:** Bit, Byte, Binary, Decimal, Hexadecimal, and Octal Systems. Conversions between different number systems; Character Codes: Introduction to ASCII, EBCDIC and Unicode character sets **Understanding Windows Operating System:** Anatomy of windows, Taskbar Settings, managing folders and files, Searching Files and folders, Customizing Windows, Recycle Bin, Control Panel.	Lecture Method, PPT, Online Sources and demo in Practical, notes from other books, discussion of the old question papers of covered topics
3	Nov 2024	Nov 2024	**UNIT - IV Presentation Software:** Creating, saving, and printing presentations; selecting design templates, Changing Background and Layout, inserting tables and images, animations and transitions **Databases**: Introduction to database, creating database using Wizard or from scratch, creating tables using wizard, entering data, using design view, saving, inserting, editing, changing properties of fields, setting primary key. **Unit-I:Devices**: Input and output devices, Keyboard, Mouse, Joystick, Scanner, OCR, OMR, Bar Code reader, Web Camera, Monitor, Printer and Plotter; Memory: Primary, Secondary/Auxiliary memory, RAM and ROM and their types, Cache memory, Units of measurement of storage; Storage devices, Hard disks, Optical disks, Memory storage devices: Flash Drive, Memory card; Types of software: System and Application software	Lecture method, PPT, Online sources, demonstrations through software, class tests, and discussions, revisions

Name of the Teacher/s **Mrs. Vandana Syal**
Department **Computer Science & Applications**
Class B.Sc II Sem III ; Subject Computer Applications; Section Voc.
Paper CA05: Programming in C++

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
	July 2024	Aug 2024	**Introduction to OOP**: Object, Class, Encapsulation, Data hiding, Inheritance and Polymorphism; Analysis and design of system using object oriented approach **C++ Basics**: Token, keywords, Identifiers, Basic data types, user defined and derived data types, symbolic constants, declaration of variables, dynamic initialization of variables, reference variables, operators in C++, I/O streams, Control structures, **Classes and Objects**: data members and Specifying a class, defining data members and member functions, private and public member functions, member function definition inside/outside the class declaration, scope resolution operator, nesting of member functions, creating and declaring objects, accessing class data members, accessing member functions, static member functions	Lecture Method, PPT, Online Sources and demo in Practical
	Sept 2024	Sep 2024	**Functions in C++:**Function prototyping, pass by value, pass by reference, In line functions, default arguments, const arguments, function overloading, Friend functions, Objects as function arguments, returning objects; **Constructors :** default constructors, parameterized constructors, multiple constructors in a class, copy constructors, dynamic constructors; **Destructors:** Definition and use	Lecture Method, PPT, Online Sources and demo in Practical
	Oct 2024	Oct 2024	**Arrays and Strings**: creating and manipulating arrays with in a class, arrays of objects, Creating and manipulating String Objects, Accessing Characters in strings; **Extending Classes using Inheritance**: base class, derived class, defining derived classes, visibility modes: private, public, protected; single inheritance: privately derived, publicly derived; making a protected member inheritable, access control to private and protected members by member functions of a derived class, multilevel inheritance, virtual base classes, abstract classes, nesting of classes Pointers **Virtual Functions and polymorphism**: virtual and pure virtual functions, Function overloading, operator overloading	Lecture Method, PPT, Online Sources and demo in Practical
	Nov 2024	Nov 2024	**Console I/O Operations**: C++ Stream Classes, Unformatted I/O functions-put(), get(), getline(), write(), Formatting with ios class functions and flags, Manipulators; **Files and Streams:** Text and binary streams, The stream class hierarchy, Processing files, declaring files, opening files using open() function or constructor function, closefiles, opening files using open() function or constructor function, closing files, String I/O, Sequential and random Access, File updation	Lecture Method, PPT, Online Sources and demo in Practical

Name of the Teacher: Ms Vandana Syal
Department: Computer Science and Applications
Class: B.Sc Voc.(CA)- II year **Semester:** 3rd **Section:** Computer Applications
Subject: Web Designing (CA-06)

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	July 2024	Aug 2024	Web Terminology: Web Server; Web Client/Browser, understanding how a Browser communicates with a Web Server, Internet, Intranet, Extranet, WWW, URL Introduction to HTML: Structure of an HTML program, Paragraph Breaks, Line Breaks; Emphasizing Material in a Web Page (Heading Styles, Drawing Lines); Text Styles (Bold, Italics, Underline); Other Text Effects (Centering (Text, Images etc.) ; Lists: Unordered List, Ordered Lists, Definition lists; Adding Images: Img element using Border, Width, Height, Align, ALT Attributes; Tables: Caption Tag, Width, Border, Cell padding, Cell spacing, BGCOLOR, COLSPAN and ROWSPAN Attribute	Lecture Method, PPT, Online Sources and demo in Practical
2	Sep 2024	Sep 2024	Linking Documents: Anchor tag, External Document References, Internal Document References and Image Maps Frames: understanding frames, creating frames, Targeting Named Frames Forms: Attributes of Form element, Input element: Text Element, Password, Button, Submit Button, Reset Button, The Checkbox, Radio, TextArea, Select and Option	Lecture Method, PPT, Online Sources and demo in Practical
3	Oct 2024	Oct 2024	Cascading style sheets (CSS): Style tag, Link tag, Types of CSS: In-Line, Internal, External Java Script: Features, tokens, data types, variables, operations, control constructs, strings arrays, functions, core language objects, client side objects, event handling. Applications related to client side form validation, Other Built-In Objects in JavaScript: The String Object, The Math Object, and The Date Object; User Defined Objects: Creating a User Defined Object, Instances, Objects within Objects	Lecture Method, PPT, Online Sources and demo in Practical
4	Nov 2024	Nov 2024	Creating Web Pages using Dreamweaver Introduction to Dreamweaver, Understanding Workspace Layout, Managing Websites, Creating a Website, Using Dreamweaver Templates, Adding New Web Pages, Text and Page Format, Inserting Tables, Lists, Images, Adding Links.	Lecture Method, PPT, Online Sources and demo in Practical

Semester 5th 2024-25

Name of the Teacher/s: Dr Indu Arora
Department Computer Science & Applications
Class: BSc III 5th Semester
Subject: Computer Applications -Paper-CA09: Programming with VB.NET

S. No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	July 2024	Aug 2024	**UNIT- I Overview of the Visual Studio .NET IDE:** Introduction to .NET Framework and the Common Language Runtime, Introduction to Visual Studio.NET IDE: Menu Bar and Tool Bar, Design Window, Code Editor, Server Explorer, Solution Explorer, Toolbox, Properties Window, Object Browser, Class view Window, Working with windows forms and events, Adding different controls of Toolbox (Text Box, Label, Check Box, Radio Button, Button, Frame) to Forms, Setting their Tab orders, enabling and disabling controls **UNIT- II Basics of VB.Net:** Constants, Variables, data types, Operators: Arithmetic, Concatenation, Comparison, logical operators, and assignment operators, Control structures: If, if/then/else selection structures, Select case Multiple-selection structure, While do while, do until, For/Next, For each repetition structure	Lecture method, PPT, Online resources, Demonstrations, Case studies, assignments
2	Sep 2024	Sep 2024	**UNIT- I:** Adding different controls of Toolbox (List Box, Combo Box, Picture Box, Progress Bar, Timer) to Forms **UNIT-III Procedures:** Introduction, sub Procedures, function procedures, event procedures, commonly used Form events, creating message boxes, input boxes **Arrays:** Declaring and allocating Arrays, **Strings:** Using Strings and String functions: len, right, left, ucase, lcase, ltrim, trim	Lecture method, PPT, Online resources, Demonstrations, Case studies, assignments
3	October 2024	October 2024	Dialog boxes, **Designing Menus:** The MenuStrip control and ToolStripMenuItem objects, working with Multiple Forms, Setting the Startup Form **UNIT - IV Working with Data and ADO.NET:** Understanding ADO.net Object model, components, Basic operations in ADO.net, Data Reader, Data Adapter and Data sets, connecting to and querying a data source, Using Data Grid view for viewing the records from tables.	Lecture method, PPT, On line resources, Demonstrations, Case studies
4	Nov 2024	Nov 2024	**UNIT - IV** Using Data Grid view for viewing the records from tables. And Practical exercises	Lecture method, PPT, On line resources, Demonstrations, Discussions of Question Banks, Case studies

Name of the Teacher/s- Dr Indu Arora & Ms. Komal Rathee
Department: Department of Computer Science & Applications
Class: BSc. III Sem 5th **Subject:** Database Management using Oracle (Paper CA10)

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	July 2024	Aug 202	Database Concepts: Introduction to databases, need, database architecture, Terminology: Tuple, Degree, attributes, Domain. Primary key, Foreign keys, candidate keys; The 12 Rules (Codd's Rule) for an RDBMS, Normalization: First, second and third Normal Form, Boyce Codd Normal Form	PPT, Assignments, Online videos, Images.
2	Sep 2024	Sep 2024	Understanding SQL-1: Data Types, Creating Tables, Creating a Table with data from Another table, Inserting Values into a Table, Updating Column(s) of a Table, Deleting Row(s) from a Table, Dropping a Column, Querying database tables, Conditional retrieval of rows, Working with Null Values, Matching a pattern from a table, ordering the result of a Query Aggregate Functions, Grouping the Result of a Query, creation and deletion of Views	PPT, Assignments, Online videos, Images, Live demonstration of SQL commands.
3	Oct 2024	Oct 2024	Understanding SQL-II: Managing privileges with Grant and Revoke Command, COMMIT and ROLLBACK, Functions: Arithmetic Functions, Character Functions, Date Functions, Group Functions, Querying Multiple Tables using Equi-Joins, Cartesian Joins, Outer Joins, Self-Joins, SET Operators: Union, Intersect, Minus; Introduction to Nested Queries	PPT, Assignments, Online videos, Brain Storming, Discussions, Oral/ Written Test, Related Material, Assignments, Live demonstration of SQL commands, Peer Learning,
4	Nov 2024	Nov 2024	PL/SQL: Introduction to PL/SQL, The Advantage of PL/SQL, PL/SQL Block Structure, PL/SQL Architecture, Fundamentals of PL/SQL, PL/SQL Data Types, Variables and Constants, Scope and Visibility of a Variable, Assignments and Expressions, Operator Precedence, Conditional and Iterative Control, Cursor Management in PL/SQL, Implicit/explicit Cursor Attributes, Exception Handling in PL/SQL; Predefined Exceptions, User Defined Exceptions.	PPT, Assignments, Live demonstration PL/SQL commands, Related Material, Question Banks

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Even Semester)
Session – (2024-25)

Name of the Teacher: Mrs. Vandana Syal/Dr. Indu Arora
Department: Computer Science & Applications
Class **B.Sc I semester 2nd** Subject: Computer Science and Applications
Paper Title: Programming in C; Paper Code: CSA-DSC-2(Maj/Min)-201

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	Jan 2025	Jan 2025	**UNIT-I:** Programming Process: Steps in developing a program, Algorithm development, Flowchart, Testing and Debugging. Fundamentals of C Languages: History of C, Character Set, Identifiers and Keywords, Constants, Types of C Constants, Rules for Constructing Integer, Real and character Constants, Variables, Data Types, rules for constructing variables. Operators and Expressions: C Instructions, Arithmetic operators, Relational operators, Logical operators, Assignment Operators, Type Conversion in Assignments, Hierarchy of Operations, Standard and Formatted Statements, Structure of a C program, Compilation and Execution.	Lecture Method, PPT, Online Sources and demo in Practical
2	Feb 2025	Feb 2025	**UNIT-II :**. Decision Control Structure: Decision making with IF-statement, IF-Else and Nested IF-Else, The else if Clause. Loop Control Structure: While and do-while, for loop and nested for loop, Case Control Structure: Decision using switch, The goto statement. Functions: Library functions and user defined functions, Global and Local variables, Function Declaration, Calling and definition of function, Methods of parameter passing to functions, recursion.	Lecture Method, PPT, Online Sources and demo in Practical
3	March 2025	March 2025	**UNIT-III** Arrays: Introduction, Array declaration, accessing values in an array, initializing values in an array, Single- and Two-Dimensional Arrays, initializing a 2-Dimensional Array, Memory Map of a 2- Dimensional Array, Arrays of characters, Insertion and deletion operations, Searching the elements in an array, Using matrices in arrays. Pointers: Pointer declaration, Address operator "&", Indirection operator "*", Array of Pointers.	Lecture Method, PPT, Online Sources and demo in Practical
4	April 2025	April 2025	**UNIT-IV:** Storage Classes in C : Auto, Extern, Register and Static with their Scope, Storage & Lifetime. String Manipulation in C: Declaring and Initializing string variables, Reading and writing strings, String Handling functions (strlen(), strcpy(), strcmp(), strcat()). Structures and Unions: Definition. Advantages of Structure, Declaration of structures, Structure Initialization, Accessing Structure members, Arrays of Structures, Union Definition, Difference between Structure and Union.	Lecture Method, PPT, Online Sources and demo in Practical

Name of the Teacher: Ms Vandana Syal/Komal Rathi

Department: Computer Science and Applications

Class: B.Sc Voc.(CA)- II year **Semester:** 4th **Section:** Voc

Subject: Data Structure (CA-07)

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	Jan 2025	Jan 2025	**Introduction to data structure**: basics and notations, introduction to complexity, **Arrays:** Introduction, various operations on Arrays like insertion, deletion, **Searching** (Binary and Linear Search) and **Sorting** (Bubble sort, Insertion sort, Selection sort)	Lecture Method, PPT, Online Sources and demo in Practical
2	Feb 2025	Feb 2025	**Linked list:** Introduction, declaration, operations:- traversing, searching, inserting, deleting; Introduction to circular list **Stacks**: Array representation of a stack, operations- initialization, push, pop, empty, and full; **Applications:** Expression evaluation, expression conversion, recursion	Lecture Method, PPT, Online Sources and demo in Practical
3	Mar 2025	Mar 2025	**Queues**: Introduction, memory representation, operations- add, removes, initialization; applications **Trees:** Definition and Basic concepts, Linked Tree Representation, Representation in Contiguous Storage, Binary Tree, Binary Tree Traversal, Searching, Insertion and deletion in Binary Trees	Lecture Method, PPT, Online Sources and demo in Practical
4	April 2025	April 2025	**Graphs:** Graphs and their application, Sequential and Linked representation of Graph, Traversing a graph (DFS and BFS).	Lecture Method, PPT, Online Sources and demo in Practical

Name of the Teacher/s **Mrs. Vandana Syal**
Department **Computer Science & Applications**
Class B.Sc II- 4th semester ; Subject Computer Applications; Section Voc.
Paper CA08: Java Programming

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
	Jan 2025	Jan 2025	**Fundamentals of Java**: Introduction to Java and its features, Java Vs. C++, ByteCode, Java virtual machine, constants, variables, data types, operators, expressions, control structures, defining class, creating objects, accessing class members, constructors, method overloading **Inheritance**: Basics, member access, using super to call super class constructors, creating a multi level hierarchy, method overriding, Dynamic method dispatch, using abstract classes, using Final.	Lecture Method, PPT, Online Sources and demo in Practical
	Feb 2025	Feb 2025	**Arrays and String handling**: creating and using arrays, understanding string and StringBuffer class and various string functions **Interfaces**: creating and using Interfaces, Implementing inheritance and multiple inheritance using Interfaces. **Packages**: understanding packages and system defined packages, creating and using user defined packages	Lecture Method, PPT, Online Sources and demo in Practical
	Mar 2025	Mar 2025	**Exception Handling**: Fundamentals, exception types, using Try and catch, Multiple Try and Catch clauses, Nested Try statements, Built –in exceptions. **Multi-threaded Programming**: Understanding Multithreading, Thread Life Cycle, Creating threads using The thread class and runnable Interface, creating Multiple Threads, Resuming and stopping Threads, Thread priorities, synchronizations	Lecture Method, PPT, Online Sources and demo in Practical
	April 2025	April 2025	**Applet fundamentals**: Introduction, Types of applet, Life Cycle, Incorporating an applet into web page using Applet Tag, running applets; using Graphics class and its methods to draw lines, rectangles, circles, ellipses, arcs and polygons	Lecture Method, PPT, Online Sources and demo in Practical

Semester 6th 2025-26
Name of the Teacher/s Dr Indu Arora
Department Computer Science & Applications
Class BScIII 6th Semester
Subject Computer Applications
Paper CA11: Computer Networks

S. No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	Jan 2025	Jan 2025	**UNIT-I Introduction to Computer networks and applications:** Network Structure and Architecture, Network Hardware and Software (protocol hierarchies, design issues for layers, interfaces and services: connection oriented and connection less), Network structure and architecture-point to point, multicast, broadcast, Classification of networks on the basis of Geographical Span (PAN, LAN, MAN and WAN), LAN topologies(Bus, Ring, Star, Mesh, Tree and Hybrid). **Network Connecting Devices**: Repeaters, Hubs, Bridges, Routers, Gateways and Switches **Introduction to Data Communication:** Analog Signal, Digital Signal, Analog vs Digital Communication	Lecture method, PPT, On line resources, Demonstrations, assignments, Peer Learning
2	Feb 2025	Feb 2025	**UNIT-II: Network models:** OSI reference model, TCP/IP model and their Comparison. **Physical Layer:** Types of Transmission media, Guided (Twisted-pair, Coaxial and Optical fiber) and Unguided (Radio, Microwave and infrared), Switching: Circuit switching, Packet Switching, Message Switching, modems, Modulation techniques: AM, PM, FM; Multiplexing Techniques: definition and Types.	Lecture method, PPT, On line resources, Case studies, Assignments, Peer Learning
3	Mar 2025	Mar 2025	**UNIT-III: The Data Link Layer:** Design Issues, Error Detection and Correction: Nature of errors, Parity Check, checksum, CRC, Hamming Code, Elementary Data Link Protocols: Simplex. Stop and Wait Protocol, Sliding Windows Protocol: one Bit sliding windows protocol, go back n, selective repeat, HDLC: High Level Data Link Protocol.	Lecture method, PPT, Assignments, Peer Learning
4	April 2025	April 2025	**UNIT-IV:** The Network Layer: Design Issues, Routing Algorithms (Shortest Path, Flooding, Flow Based, Distance Vector, Link State, Broadcast), Congestion Control Algorithms and their general principles (Leaky Bucket, Token Bucket)	Lecture method, PPT, Case studies, assignments Question Banks, Peer Learning

Name of the Teacher/s Dr Indu Arora
Department Computer Science & Applications
Class BScIII 6th semester
Subject Computer Applications; Paper: CA12: Working with Linux,

S. No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	Jan 2025	Jan 2025	**UNIT- I Introduction to Linux:** Kernel, Linux's shell, Features of Linux, History, Minimum system requirements, Boot and Root disks, Starting and stopping Linux system, passwords, logging in and out, terminal Handling commands: who, understanding wildcards, Environment variables, Understanding I/O Redirection and Piping: Introduction, cut, paste, sort, tee; Introduction to Regular Expressions and grep, Process Management: Types of processes, managing processes with ps, bg, fg, nice, kill	Lecture method, PPT, On line resources, Demonstrations, Peer Learning
2	Feb 2025	Feb 2025	**UNIT- II Using file system:** Introduction to common types of files, Filenames, Introduction to different types of directories: Parent, Subdirectory, Home directory; rules to name a directory, understanding Important directories in Linux File System, Absolute and relative filenames, creating and using files and directories(mkdir, cd cat), listing files (ls, ls-l), pwd, moving and copying files and directories (mv, cp), Removing files and directories (rm, rmdir), using wildcards with files and directories, File and directory permissions using relative and absolute methods, Changing group ownership, umask settings	Lecture method, PPT, On line resources, Demonstrations, Case Studies, Peer learning
3	Mar 2025	Mar 2025	**UNIT - III Vi editor:** starting vi, vi modes, inserting text, quitting vi, deleting text, copying and moving text, searching and replacing text **Introduction to shell programming:** Defining Variables, Unsetting Variables, Environment Variables, Substitution, Filename Substitution (Globbing), Variable Substitution, Command and Arithmetic Substitution, Quoting, Quoting with Backslashes, Using Single Quotes, Using Double Quotes, Quoting Rules and Situations, The if Statement, The case Statement, The while Loop, The for and select Loops, Loop Control	Lecture method, PPT, On line resources, Demonstrations, Case studies
4	April 2025	April 2025	**UNIT-IV: Understanding System Administration activities:** Superuer (su) command, Taking backups using tar, Managing disk space with df and du, Mounting and Un-mounting file system with mount and unmount, Managing users	Lecture method, PPT, On line resources, Demonstrations, Question banks Case studies