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

Monthly Teaching Plans (Odd Semester/even semester)

Session – (2025-26)

Name of the Teacher Dr Indu Arora
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 2025	Aug 2025	**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 2025	Oct 2025	**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 2025	Nov 2025	**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 Science and Applications
Paper Title: Programming in C++ Paper Code:CSA-DSC-3(Maj/Min)-301

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
	24th July	Aug 31	Principles of Object-Oriented Programming (OOP): Introduction to OOP, Difference between OOP and Procedure Oriented Programming; Concepts: Object, Class, Encapsulation, Abstraction, Polymorphism and Inheritance, Applications of OOP. Special operators: scope resolution operator, Member Dereferencing operators, Memory management operators, Manipulators and Type cast operator. Structure of a C++ Program and Classes and Objects: Class Declaration: Data Members, Member Functions, Private and Public members, Creating Objects, accessing class data members, Accessing member functions; Class Function Definition: Member Function definition inside the class declaration and outside the class declaration.	Class test, Lecture Method, notes from other books, discussion of the previous year question paper of covered topics
	Sept 1	Sept 30	Friend function, inline function, Static data members, Function Overloading, Arrays within a class. Arrays of Objects; Objects as function arguments: Pass by value, Pass by reference, Pointers to Objects. Constructors: Declaration and Definition, Types of Constructors, (Default, Parameterized, Copy Constructors). Destructors: Definition and use. Operator Overloading: Concept of Operator Overloading, Overloading unary and binary operators.	Class test, Lecture Method, notes from other books, discussion of the previous year question paper of covered topics
	Oct 1	Oct 31	Inheritance: Extending Classes Concept of inheritance, Base class, defining derived classes, Visibility modes: Public, Private, Protected; Types of Inheritance: Single inheritance: Privately derived, publicly derived; Making a protected member inheritable, multilevel inheritance, multiple Inheritance and ambiguity of multiple inheritance, Hierarchal Inheritance, Hybrid, Nesting of classes. Polymorphism: Definition, Application and demonstration of Data Abstraction, Encapsulation and Polymorphism, Static and Dynamic Polymorphism, Virtual Functions, pure virtual functions. and pure virtual functions, Function overloading, operator overloading	Class test, Lecture Method, notes from other books, discussion of the previous year question paper of covered topics
	Nov 1	Nov 20	Exception Handling: Definition, Exception Handling Mechanism: Throwing mechanism and Catching Mechanism, Rethrowing an Exception File Processing: Opening and closing of file, Binary file operations, structures and file operations, classes and file operations, Random file processing.	Class test, Lecture Method, notes from other books, discussion of the previous year question paper of covered topics

Semester 5th 2025-26

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 2025	Aug 2025	**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 2025	Sep 2025	**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 2025	October 2025	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 2025	Nov 2025	**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 2026	Aug 2026	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 2026	Sep 2026	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 2026	Oct 2026	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 2026	Nov 2026	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 – (2025-26)

Name of the Teacher: Mrs. Vandana Syal
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 2026	Jan 2026	**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 2026	Feb 2026	**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 2026	March 2026	**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 2026	April 2026	**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

4th semester

Name of the Teacher/s Mrs. Vandana Syal/ Mrs Komal Rathee
Department Computer Science & Applications
Class B.Sc II Subject Computer Science and Applications
CSA-DSC5(Maj/Min)-401 Software Engineering

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	July 2026	Aug 2026	UNIT – I Introduction to Software Engineering: Definition, Software Engineering goals, Characteristics of well-engineered software. Software Process Models: Waterfall Model, Prototyping Model, Spiral Model. Software Requirement Specification (SRS): Software Requirements, Definition of SRS, Characteristics of SRS, Components of SRS, Designing of SRS. System Analysis: Principles of Structures Analysis, DFDs, E-R Diagrams, Data Dictionary.	PPT, Assignments, Online videos, Images.
2	Sep 2026	Sep 2026	UNIT – II Software Design: Design Objectives, Design Principles, Concepts, Design Process, Design Methodologies: Structured Design, Modular Design, Object Oriented Design, User Interface Design and its elements and its Characteristics. Software Project Planning & Scheduling: Objectives, Decomposition techniques, Planning and Scheduling Tools: GANTT Chart, PERT Chart, Critical Path Method and Work Breakdown Structure; Cost estimation, Cost estimation Models: Single Variable Model, COCOMO Model; Software Risks, Risk Assessment and management.	PPT, Assignments, Online videos, Images, Live demonstration of SQL commands.
3	Oct 2026	Oct 2026	UNIT – III Software Metrics: Role of Metrics and Measurement, Types of Software Metrics: Product Metrics, Software Size Metrics: LOC and Function Points, Process Metrics, People Metrics. System Maintenance and Reliability: Software Quality and features, Maintenance and its types; Factors Affecting Software Reliability, Software Reliability vs Hardware Reliability, Software Reliability Metrics.	PPT, Assignments, Online videos, Brain Storming, Discussions, Oral/ Written Test, Related Material, Assignments, Live demonstration of SQL commands, Peer Learning,
4	Nov 2026	Nov 2026	UNIT-IV Software Testing Techniques: Introduction to Software Testing Process, Objectives of Software Testing, BBT & its Techniques, WBT & its Techniques. Integration Testing, Functional Testing, Object Oriented Testing, Alpha and Beta Testing. Hardware and Software Selection: Types of Software, Procedure for Hardware/Software selection: Major phases in selection, Evaluation and Validation, Vendor Selection, Post – Installation Review. Software selection- Criteria for Software Selection, the evaluation process	PPT, Assignments, Live demonstration PL/SQL commands, Related Material, Question Banks

4th Semester

Name of the Teacher/s Mrs. Vandana Syal
Department Computer Science & Applications
Class **B.Sc II- 4th semester** ; Subject Computer Science and Applications
CSA-DSC6(Maj)-402 Database Management System using Oracle

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	July 2026	Aug 2026	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 UNIT – I 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 2026	Sep 2026	UNIT – II 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 2026	Oct 2026	UNIT – III 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.	PPT, Assignments, Online videos, Brain Storming, Discussions, Oral/ Written Test, Related Material, Assignments, Live demonstration of SQL commands, Peer Learning,
4	Nov 2026	Nov 2026	UNIT – IV 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

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 2026	Jan 2026	**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 2026	Feb 2026	**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 2026	Mar 2026	**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 2026	April 2026	**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 2026	Jan 2026	**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 2026	Feb 2026	**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 2026	Mar 2026	**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 2026	April 2026	**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