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

Monthly Teaching Plans

Session – (2026-27)

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 & 101 P

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	July 2026	Aug 2026	**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-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	Lecture Method, PPT, Online Sources and demo in Practical notes from other books, discussion of the old question papers of covered topics
2	1st Sep 2026	30th Sep 2026	**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 **Using Functions:** Statistical, financial, Mathematical, string, date and time. **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: 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	Oct 2026	Oct 2026	**UNIT - IV 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
4	Nov 2026	15th Nov 2026	**UNIT - IV 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.	Lecture method, PPT, demonstrations, class tests, and discussions,

				revisions

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

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 &301P

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	July 2026	Aug 2026	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
2	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
3	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
4	Nov 1	Nov 15	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

4th semester

Name of the Teacher/s Dr Indu Arora/ Mrs. Vandana Syal
Department Computer Science & Applications
Class B.Sc II **Semester 4** Subject: Computer Science and Applications
Paper Code: CSA-DSC-5(Maj/Min)-401
Paper Name: 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
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, Peer Learning
4	Nov 2026	15th 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, 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
Paper Code and Name: 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	15th 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 5th 2026-27

Name of the Teacher/s: Dr Indu Arora
Department Computer Science & Applications
Class: BSc III 5th Semester
Subject: Computer Science and Applications
Paper- CSA-DSC5(Maj/Min) -501 &501 P: Python programming

S. No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	July 2026	Aug 2026	**UNIT-I:** Introduction to Python Programming: IDLE interpreter, Interactive Mode Programming, Script Mode Programming, The Role of Indentation in Python, Variables, Assigning Values to Variables, Input/Output with Print and Input Functions, Basic Data Types in Python. Operators in Python: Arithmetic, Relational, Logical, Compound Assignment, Increment and Decrement, Ternary, Bitwise, and Comma Operators, Precedence and Order of Evaluation, Statements and Expressions, Automatic and Explicit Type Conversions. The Conditional Statements in Python: If, If-else, If-elif-else, Python loops, for-loop, while-loop, forelse, while-else, Nested Loops, the built-in Function range(), continue and break statement.	Lecture method, PPT, Online resources, Demonstrations, Case studies, assignments
2	Sep 2026	Sep 2026	**UNIT-II:** Strings: Introduction to String, String Operations, Transversal of string, Methods and Inbuilt Functions. Lists: Definition, Operations, Traversal, Methods and Inbuilt Functions, Nested Lists, Copying Lists, List as an argument, Mutable and Immutable Data types. Tuples: Introduction, Operations, Traversal, Methods and Inbuilt Functions, Nested Tuples Dictionaries: Introduction, Traversal, Methods and Inbuilt Functions, Manipulating Dictionaries.	Lecture method, PPT, Online resources, Demonstrations, Case studies, assignments
3	October 2026	Octob er 2026	**UNIT-III:** Function: definition, advantages, User-defined Functions, defining a function, Function Parameters, Formal Parameters, Actual Parameters, Global and Local Variables, return values, Introduction to Anonymous Functions, passing a list, Python standard Libraries. Classes: creating and using a class, working with classes and instances, importing classes, Python standard library.	Lecture method, PPT, On line resources, Demonstrations, Case studies
4	Nov 2026	Till end of Semes ter	**UNIT-IV:** Exception Handling: exceptions and errors, try-except block, the else block, handling the Zero Division Error and File Not Found Error exception. File Handling: Introduction, Types of Files, Opening and Closing a File, writing to a file, reading from a file, Setting offset in a file, Creating and Traversing a file.	Lecture method, PPT, On line resources, Demonstrations, Discussions of Question Banks, Case studies

Name of the Teacher/s- Mrs Vandana Syal
Department: Department of Computer Science & Applications
Class: BSc. III Sem 5th
Paper Code and Name: CSA-DSC5(Maj)-503 Programming with JAVA

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	July 2026	Aug 2026	Unit 1: Basic Principles of Object Oriented Programming: Introduction and Features of Java, Creating the Java program, Compiling and Running the programs, Java Virtual Machine, Java Bytecode Basic Language Elements: Tokens, Identifiers, Keywords, Literals, Comments, Primitive Data types, Operators, Assignments; Input/output in Java: Basics, I/O Classes, Reading Console Input, Decision and Loop Control Statements, break, continue	PPT, Assignments, Online videos, Images.
2	Sep 2026	Sep 2026	Unit 2: Class and Object in Java: Defining a Class, Creating Objects, Accessing Class Members, Constructors, Methods Overloading, Static Members, Abstract Class and methods; Final classes, variables and Methods; Finalizer Methods Array & String in Java: Defining an Array, Initializing & Accessing Array, Multi–Dimensional Arrays, Defining Strings, Operation on Array and String, Managing Strings using String and StringBuffer Classes	PPT, Assignments, Online videos, Images
3	Oct 2026	Oct 2026	Unit 3: Inheritance: Benefits of Inheritance, Types of Inheritance in Java, Extending a Class, Defining a subclass, Subclass constructor, Multilevel inheritance, Hierarchical inheritance, Overriding Methods, Visibility Control Packages & Interfaces: Basic Concepts of Package and Interface, Organizing Classes and Interfaces in Packages, Defining and naming a Package, Importing Packages, CLASSPATH Setting for Packages, Access Protection in Packages, Standard Packages	PPT, Assignments, Assignments
4	Nov 2026	Till end of semester	Unit 4: Exception Handling in Java: Basics of Exception, Types of Exception, Use of try, catch, finally, throw, throws in Exception Handling, Catching more than one Exception, In-built and User Defined Exceptions, Checked and Un-Checked Exceptions, Applet in Java: Applet Basics, Applet Architecture, Applet Life Cycle, Applet Tag, Parameters to Applet, Embedding Applets in a Web page, Creating Simple Applets Multithreaded Programming: Creating a single and multiple threads using different ways, thread priorities, synchronization.	PPT, Assignments, , Related Material, Question Banks

BSC Semester 6th 2025-26
Name of the Teacher/s Dr Indu Arora
Department Computer Science & Applications
Paper code: CSA-DSC6(Maj/Min) -601
Paper Name: Introduction to Data Science

S. No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	Jan 2026	Jan 2026	**UNIT-I:** Introduction to Data Science Meaning and importance of data science, types of data, data science life cycle, data collection methods, basics of Python/R, simple data operations, introduction to data analysis, and basic data visualization.	Lecture method, PPT, On line resources, Demonstrations, assignments, Peer Learning
2	Feb 2026	Feb 2026	UNIT II Data Preprocessing and Data Management Data cleaning, handling missing data, removing errors, data transformation, feature creation, reducing data size, basics of databases, simple SQL commands, basics of NoSQL, and introduction to data warehousing.	Lecture method, PPT, On line resources, Case studies, Assignments, Peer Learning
3	Mar 2026	Mar 2026	UNIT III Machine Learning Fundamentals Introduction to machine learning, supervised and unsupervised learning, basic regression methods, simple classification methods, basic clustering, model checking methods, train-test split, cross-validation, and overfitting/underfitting concepts.	Lecture method, PPT, Assignments, Peer Learning
4	April 2026	till end of semester	**UNIT-IV:** Applications, Tools, and Emerging Trends Basics of big data, introduction to Hadoop and Spark, introduction to Power BI, introduction to Tableau, applications of data science in various fields, data privacy, ethics, and case studies (Retail – Product Demand Prediction and Healthcare – Early Disease Detection)	Lecture method, PPT, Case studies, assignments Question Banks, Peer Learning

Name of the Teacher/s Dr Indu Arora
Department Computer Science & Applications **(CSA)**
Class BScIII 6th semester
Paper Code: CSA-DSC6(Maj/Min)-602 Server side Scripting with PHP

S. No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	Start of Semester	31 Jan, 2027	Introduction to Server-Side Scripting and PHP: Client-side vs server-side scripting, Need of server-side scripting in dynamic web development, Overview of web servers, Role of PHP in web development, PHP Installation (XAMPP/WAMP). PHP Basics: PHP Syntax and structure, PHP Variables, constants and data types, Embedded PHP in HTML, Operators, expressions, operator precedence, comments, echo and Print statement. Control structures: Conditional statements: if, if-else, nested-if, switch; looping structures: for, while, do-while, foreach; break and continue.	Lecture method, PPT, On line resources, Demonstrations, Peer Learning
2	1 Feb, 2027	28 Feb, 2027	Functions: Built-in PHP functions, User defined functions: function definition, formal parameter vs actual parameter, variable scope, file inclusion Statements Arrays: Indexed, Associative and Multidimensional Arrays; Creating Arrays, The array() construct; Accessing Array elements, Iterating with each() and foreach(), Iterative functions: current(), next(), prev(), reset(), end(). Strings: String declaration and syntax, string operators, concatenation and assignment, The heredoc syntax, common string functions : string cleanup functions, case functions, string replacement, finding characters and substrings.	Lecture method, PPT, On line resources, Demonstrations, Case Studies, Peer learning
3	1 March, 2027	31 March, 2027	Working with Forms and User Input: Super global variables, Creating forms using HTML, GET and POST methods, Retrieving form data in PHP, Validating user input, Handling file uploads in PHP. Database Connectivity: Connecting to MySQL, MySQL Functions, Making MySQL queries, executing queries, fetching data sets, creating MySQL database with PHP; Integrating forms and Databases: Basic form submission to a database, editing data with an HTML form.	Lecture method, PPT, On line resources, Demonstrations, Case studies
4	1 April 2027	Till end of semester	Sessions and Cookies: Understanding sessions, starting and ending sessions, working with session variables, encoding and decoding session variables, Introduction to cookies, creating and retrieving cookies, modifying and deleting cookies, cookie expiration and lifetime. Error and Exceptional Handling : Types of PHP Errors (notice, warning, parse error), PHP Exceptions: try, catch and finally blocks, throwing an exception, creating custom exceptions, multiple catch blocks.	Lecture method, PPT, On line resources, Demonstrations, Question banks Case studies