GOVT. COLLEGE FOR WOMEN HISAR

Lesson Plan Session January 2025 to May 2025

Name of Teacher: Amit Bansal

Class: BSc-6th Sem

Paper: Python Programming

Month	Topics
January 2025	History and features of Python programming Python interpreter, Variable, Identifiers and literal, Token, Keywords Data types, arithmetic operators, relational operators, logical operators, Bitwise operators, Assignment operators, Membership operators, Identity operators, Operator precedence, Comment, Indentation, Need for indentation, Built-in Functions-input, eval, composition, print, type, round, min and max, pow Type conversion, Random Number Generation, Mathematical functions, Getting help on a function, Assert statement
February2024	If conditional statement, for and while statements, break, continue and pass statements, Function definition and Call, Function Arguments- Variable Function Arguments, Default Arguments, Keywords Arguments, Arbitrary Argument Command Line Arguments, Global and Local Variables, Accessing local variable outside the scope, Using global and local variables in same code Using global and local variables with same name.
March2024	String as a compound data type, String operations-Concatenation, Repetition, Membership operator, slicing operation, String methods-count, find, rfind, capitalize, title, lower, upper, swapcase, islower, isupper, istitle, replace, isalpha, isdigit, isalnum. String processing examples. List operations- Concatenation, Multiplication, length, indexing, slicing, min, max, sum Membership operator. List function-append, extend, remove, pop, count, index, insert, sort, reverse. Recursive solutions for problems on Numbers, String and list.
April 2024	Introduction to classes, method, Class object, Instance object, Method object Class as abstract data type, Date Class, Access attributes using functions-getattr, hasattr, setattr, delattr Built-in Class attributes of class object (dict, doc, name module) Screen object–Point and Line, box, polygon, circle, arc, screen object Methods–move_to() Move_by(), rotate_by(), text(). Sound–sound(), play_sound(), stop_sound().

Name of Teacher: Vipin Babbar

Class: BSc-6th Sem

Paper: Computer Graphics

Month	Topics
Jan-2025	Historical Prospective of computer graphics Basic element of computer graphics Modelling, Rendering, Animation Application of computer graphics
Feb-2025	Input Devices: Mouse, Light Pen, Graphic tablets,Joysticks, Trackball, Flatbed Scanner, Hard Copy Devices: Laser Printer, Flatbed Plotter Video Display Devices: Pixel, Resolution, Aspect RatioRefresh Rate and Interlacing, Cathode Ray Tube Flat Panel Display- LCD and Plasma Panel, Raster and Random Scan Display
March-2025	Fundamental techniques in graphics: Line generation algorithms- DDA Algorithm, Bresenham's line Generation Algorithm,Circle Generation Algorithm - Bresenham's Algorithm, Midpoint circle algorithm, Polygon filling algorithm Scan line algorithm, Viewing and clipping- Point clipping and line clipping
April-2025	Cohen- Sutherland line clipping algorithm Polygon clipping, Sutherland Hodgman algorithm Dimensional Graphics- Cartesian and homogeneous co-ordinate system Geometric transformations- Translation, Scaling, Rotation, Reflection, Dimensional Graphics: Geometric transformationsTranslation, Scaling, Rotation, Reflection Mathematics of Projections (Parallel & Perspective)

Lesson Plan Session January 2025 to May 2025

Name of Teacher: Amit Bansal

Class: BSc-4th Sem

Paper: Software Engineering

Date	Topics
January2024	Program vs. Software, Software Engineering, Programming paradigms, Software Crisis–problem and causes, Phases in Software development: Requirement Analysis, Software Design, Coding, Testing, Maintenance, Software Development Process Models: Waterfall, Prototype, Evolutionary and Spiral Models
February2024	Feasibility Study, Software Requirement, Need for SRS, Characteristics of an SRS, Components of an SRS, Structure of requirement document, validation and metrics, Problem Analysis, Data Flow Diagram, Data Dictionary, Decision table, Decision Tree. Process Planning, Effort estimation, COCOMO model,
March2024	Project scheduling and Staffing, team structure Software configuration management, Quality assurance plans, Project monitoring plans, Risk Management. Software Implementation and Maintenance: Type of maintenance, Management of Maintenance, Maintenance Process, maintenance characteristics.
April2024	Testing Fundamentals Error, Fault, and Failure. Test Oracle, Test Case, and Test Criteria. Psychology of Testing, Black Box Testing, Equivalence Class Partitioning, Boundary value analysis, Cause effect graphing, White Box Testing, Control flow based criteria, Level of Testing, Unit Testing, Integration testing, System testing, Validation Testing, Alpha and Beta testing, acceptance testing.

Lesson Plan Session January 2025 to May 2025

Name of Teacher: Vipin Babbar

Class: BSc-4th Sem

 Paper: Computer Network

Month	Topics
14 Feb-2025 onwards	Components, Example, Network Data Model– Introduction, Features, Components, Example, Differences between Hierarchical Data Model and Network Data Model, Introduction to Data Communication and Computer Networks; Uses of Computer Networks; Types of Computer Networks and their Topologies;
March-2025	Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways; Network Software:, Guided and Wireless Transmission Media; Communication Satellites; Switching and Multiplexing; Modems and modulation techniques Unit Test preparation and conduct of unit test
April-2025	Data Link Layer Design issues; Error Detection and Correction methods; Sliding Window Protocols: One-bit, Go Back N and Selective Repeat; Media Access Control: ALOHA, Slotted ALOHA, Latest LAN and TELNET Technologies in practical, CSMA, Collision free protocols; Introduction to LAN technologies: Ethernet, Switched Ethernet, Fast Ethernet, Gigabit Ethernet; Token Ring
May-2025	Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Link State Routing, Hierarchical Routing; Introduction to Wireless LANs and Bluetooth, Network Design issues and Protocols; E-Mail and WWW services; Network Security Issues: Security attacks

Lesson Plan Session January 2025 to May 2025

Name of Teacher: Vipin Babbar

Class: BSc-2nd Sem

 Paper: Data Structure using C

Month	Topics
14 Feb-2025 onwards	Elementary data organization, Data Structure definition, Data type vs. data structure, Categories of data structures, Data structure operations, Applicationsof data structures, Algorithms complexity and time-space tradeoff, Big-O notation.
March-2025	Strings: Introduction, strings, String operations, Pattern matching algorithms Arrays: Introduction, Linear arrays, Representation of linear array in memory, Traversal, Insertions, Deletion in an array, Multidimensional arrays, Parallelarrays, Sparse matrix. Linked List: Introduction, Array vs. linked list, Representation of linked lists in memory, Traversal, Insertion, Deletion, Searching in a linked list, Header linked list, Circular linked list, Two-way linked list, Garbage collection, Applications of linked lists. Algorithm of insertion/deletion in SLL. Stack: primitive operation on stack, algorithms for push and pop. Representationof Stack as Linked List and array, Stacks applications : polish notation, recursion. Introduction to queues, Primitive Operations on the Queues, Circular queue, Priority queue, Representation of Queues as Linked List and array Applications of queue. Algorithm on insertion and deletion in simple queue and circular queue.
April-2025	Trees - Basic Terminology, representation, Binary Trees, Tree Representations using Array & Linked List, Basic operation on Binary tree, Traversal of binary trees:- In order, Preorder & post order, Applications of Binary tree. Algorithm of tree traversal with and without recursion.
May-2025	Introduction to graphs, Definition, Terminology, Directed, Undirected &Weighted graph, Representation of Graphs. and revision

Lesson Plan February 2025 to May 2025

Name of Teacher: Mr. Amit Bansal

Class: - BSc in Physical Sciences -2nd Sem (Minor Course)

Subjects:-Internet and Web Design

Date	Topics
Feb 2025	Internet Evolution and Concept, Internet Vs Intranet, Growth of Internet, Internet Service Provider (ISP) & its Function, Connectivity- Dialup, Leased line; URL, Protocols. Email Basics, Address, Features, Sending & Receiving email, Email Protocols, Lables in Email, Email services providers, Internet chatting - Voice chat, Text chat
March 2025	History of WWW, Web Browser, Web server, Search Engines, working of Search Engine, Web Protocols (HTTP, FTP, SNMP etc.), TCP/IP layer with protocols. Steps for developing a Website; contents selection; Webpage, Home page; Domain Names; website publishing.
April 2025	Concepts of Hypertext, Versions of HTML, Elements of HTML, Syntax, Tags & Attributes, Head & Body Sections, Inserting Texts, Images, Hyperlinks, Backgrounds and Color Controls, Different HTML Tags, Table Layout and Presentation, Creating Lists, Use of Font Size & Attributes, List Types and Its Tags, Use of Frames and Forms in Web Pages.
May 2025	Revision

Lesson Plan February 2025 to May 2025

Name of Teacher: Mr. Amit Bansal/ Mr. Vipin Babbar

Class: - BA/BSc in Physical Sciences/BCom -2nd Sem (Skill Enhancement Course)

Subjects:-Office Tools

Date	Topics
Feb 2025	Operating System - Definition, Functions, Types of Operating System, Basics of Popular Operating Systems, The User Interface, Exploring Computer, Icons, taskbar, desktop, Using Menu and Menu-selection, managing files and folders, Control panel – display properties, add/remove software and hardware, Common utilities.
March 2025	Word Processing - Introduction to Word Processing, Menus, Creating, Editing & Formatting Document, Spell Checking, Printing, Views, Tables, modifying page setup, applying document themes, applying document style sets, Inserting headers and footers
April 2025	Spread Sheet: Elements of Electronics Spread Sheet, Applications, Creating and Opening of Spread Sheet, Menus, Manipulation of cells: Enter texts numbers and dates, Cell Height and Widths, copying of cells, Mathematical, Statistical and Financial function, Drawing different types of charts, Sort and Filter Data Creating Presentation, Type of presentation views. Using sound, Animation, Working with Objects, and Printing.
May 2025	Revision