GOVT. COLLEGE FOR WOMEN HISAR

Lesson Plan Session Jan 2023 to May 2023

Name of Teacher: Amit Bansal

Class: BSc-6th Sem

Paper: Python Programming

Month	Topics
Jan-2023	History and features of Python programming Python interpreter, Variable, Identifiers and literal, Token, Keywords Data types, arithmetic operators, relational operators, logical operators,
Feb-2023	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, powType conversion, Random Number Generation, Mathematical functions Getting help on a function, Assert statement if conditional statement, for and while statements, break, continue and pass statements
March-2023	Function definition and Call, Function Arguments- Variable Function Arguments Default Arguments, Keywords Arguments, Arbitrary ArgumentCommand Line Arguments, Global and Local Variables Accessing local variable outside the scope, Using global and local variables in same codeUsing global and local variables with same name.
April-2023	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.
May-2023	Introduction to classes, method, Class object, Instance object, Method objectClass 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().

Lesson Plan Session Jan 2023 to May 2023

Name of Teacher: Vipin Babbar

Class: BSc-6th Sem

Paper: Computer Graphics

Month	Topics
Jan-2023	Historical Prospective of computer graphics Basic element of computer graphics Modelling, Rendering, Animation Application of computer graphics
Feb-2023	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-2023	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-2023	Cohen- Sutherland line clipping algorithm Polygon clipping, Sutherland Hodgman algorithm Dimensional Graphics- Cartesian and homogeneous co-ordinate system Geometric transformations- Translation, Scaling, Rotation, Reflection
May-2023	Dimensional Graphics: Geometric transformationsTranslation, Scaling, Rotation, Reflection Mathematics of Projections (Parallel & Perspective)

Lesson Plan Session Jan 2023 to May 2023

Name of Teacher: Garima Mann
Class: BSc-4thnd Sem
Paper: Computer Networks

Month	Topics
Jan-2023	Introduction of computer communication and network technologies Use of computer Networks Network Devices, Nodes and Hosts Types of computer networks and their topologies
Feb-2023	OSI reference Model TCP/IP Reference model Analog and digital communication concepts Data rate and bandwidthCapacity, baud rate
March-2023	Digital carrier system, guided and wireless transmission mediaCommunication satellites Switching and multiplexingData link layer Framing, flow control, Error detection and correctionSliding window protocol
April-2023	Media access protocol Random access protocolToken Passing protocol Token ring Ethernet, gigabit Ethernet Token ring, FDDI, bluethooth and wifiNetwork layer and routing concepts ;
May-2023	Virtual circuit and datagrams, routing algorithms, Flooding, shortest path routing, Distance vector routing,link state routing, hierarchical routing Congestion control algorithm Internetworking, IPV4 and IPV6

Lesson Plan Session Jan 2023 to May 2023

Name of Teacher: Garima Mann
Class: BSc-4th Sem
Paper: Software Engineering

Month	Topics
Jan-2023	Program vs. Software, Software Engineering, Programming paradigms, Software Crisis – problem and causes, Phases in Software development: Requirement Analysis, Software Design, Coding, Testing, Maintenance,
Feb-2023	Software Development Process Models: Waterfall, Prototype, Evolutionary and Spiral Models Feasibility Study, Software Requirement Analysis and Specifications: SRS, Need for SRS, Characteristics of an SRS, Components of an SRS,
March-2023	Problem Analysis, Information gathering tools, Organizing and structuring information, Requirement specification, validation and metrics. Software Project Planning: Cost estimation: COCOMO model, Project scheduling, Staffing and personnel planning, team structure
April-2023	Software configuration management, Quality assurance plans, Project monitoringplans, Risk Management. Software Implementation and Maintenance: Type of maintenance, Management of Maintenance, Maintenance Process, maintenance characteristics.
May-2023	Software testing strategies: unit testing, integration testing, Verification and Validation , System testing, Alpha and Beta testing, acceptance testing, Black box, white box testing. Cyclomatic Complexity.

Lesson Plan Session Jan 2023 to May 2023

Name of Teacher: Amit Bansal

Class: BSc-2nd Sem

Paper: Computer Organization

Month	Topics
Jan-2023	Decimal, Binary, Octal, Hexadecimal Number System Conversion from one number system to other Binary arithmetic operations Representation of Negative Numbers: 1's complement and 2's complement Fixed and floating point representation
Feb-2023	Character representation (BCD, EBCDIC and ASCII Code), BCD number system Weighted Codes, Self Complementing Code, Excess-3 code, Gray and Cyclic code Boolean Algebra definition, Postulates of Boolean Algebra, Fundamental Theorems of Boolean Algebra; Duality Principle Demorgan's Theorems, Boolean Expressions and Truth Tables
March-2023	Standard SOP and POS forms Canonical representation of Boolean expressions Simplification of Boolean Expressions using theorems of Boolean algebra Minimization Techniques for Boolean Expressions using Karnaugh Map AND, OR, NOT, NOR, NAND & XOR Gates and their Truth tables Half Adder & Full Adder, Half Subtractor & Full Subtractor, decoders, multiplexors Realization of Boolean expressions using decoders and multiplexor
April-2023	Flip-Flops, Types- RS, T, D, JK Master-Salve JK flip flop, Triggering of Flip Flops; Flip Flop conversions Shift Registers, Synchronous and Asynchronous Counters. Register Organization, Bus system, Instruction set, timing and control, instruction cycle, memory Reference, Input-output and interrupt.
May-2023	Instruction formats, addressing modes, instruction codes. Peripheral devices, I/O interface, Modes of data transfer, Direct Memory Access

Lesson Plan Session Jan 2023 to May 2023

Name of Teacher: Vipin Babbar

Class: BSc-2nd Sem

Paper: Data Structure using C

Month	Topics
Jan-2023	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.
Feb-2023	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.
March-2023	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-2023	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-2023	Introduction to graphs, Definition, Terminology, Directed, Undirected &Weighted graph, Representation of Graphs. and revision