Govt. College Mangali (Hisar)

Department of Computer Science

Lesson Plan

Academic Calendar- Even Sem 2024-25	
Teaching-I	01.01.2025 to 08.03.2025
Vacations(Holi)	09.03.2025 to 16.03.2025
Teaching-II	17.03.2025 to 30.04.2025
End Semester Examinations (Major Test)(for UTD and Affiliated Colleges)	01.05.2025 onwards
Summer Vacations (for Affiliated Colleges)	27.05.2025 to 07.07.2025

Name of Teacher: Dr. Monika	**Class:** B.A./B. Sc. II Sem	**Session:** 2024-25
Subject: Computer Science/ DSC	**Nomenclature of Paper:** Data Structure Using C	**Paper Code:** C24COS201T

Week	**Jan 25/Duration**	**Topi c-** Unit-I
1	19 Jan-25 Jan	Data Structures Definition and its types, Data Structure operations, Static and dynamic memory storage, Algorithms complexity and time-space tradeoff, Big-O notation
2	27 Jan-31 Jan	**Strings**: Introduction, storing strings, String operations, Pattern matching algorithms. Assignment -1.
Week	**Feb25/Duration**	**Topic-** Unit-II
1	01 Feb-08 Feb	**Arrays:** one-dimensional arrays, matrices, sparse matrices, multi-dimensional arrays, operations on arrays.
2	10 Feb-15 Feb	Linear search, Binary search, Insertion sort, selection sort, Bubble sort, Merge sort. Test 1.
3	17 Feb-22 Feb	**Linked List**: Array vs linked list, Types (singly, doubly, singly circular, header, doubly circular,), Operations on Lists – create, insert, delete, search.
4	24 Feb-28 Feb	Operations on Lists – create, insert, delete, search, Applications of linked lists
Week	**March25/Duration**	**Topic-** Unit-III
1	01 March-08 March	**Stack:** Definition, Array implementation of stacks, Linked implementation of stacks, Applications of Stacks: Infix, Postfix and prefix expression, conversions and evaluation of expressions. Assignment-2.
2	17 March-22 March	Recursion, Quick Sort. **Queue:** Definition, Array implementation of queues, Linked implementation of queues.
3	24 March- 31 March	Circular queues, Priority queues, Double-ended queues, Applications of queue.
Week	**April25/Duration**	**Topic-** UNIT-IV
1	01 April -05 April	**Trees:** Binary Trees and their properties, Linked and static Representation of binary trees, Complete Binary Tree, Threaded Binary tree, Different tree traversal algorithms,
2	07 April -12 April	Binary Search Tree (create, delete, search, insert, display). Test -2.
3	14 April -19 April	**Graph:** Definition, Array and linked representation of graphs, Graph Traversal (BFS and DFS).
4	21 April-26 April	Adjacency matrix and adjacency lists, path matrix, Finding Shortest Path - Warshall's Algorithm.
5	28 April-30 April	Revision.

Lesson Plan

Name of Teacher: Dr. Monika	**Class:** B.A./B. Sc. II Sem	**Session:** 2024-25
Subject: Computer Science/ VAC	**Nomenclature of Paper:** Digital Empowerment	**Paper Code:** C24VAC109T
Week	**Jan 25/Duration**	**Topic-** Unit-I
1	19 Jan-25 Jan	**Digital Empowerment**: Needs and challenges
2	27 Jan-31 Jan	Vision of Digital India: DigiLocker, E-Hospitals
Week	**Feb25/Duration**	**Topic-** Unit-II
1	01 Feb-08 Feb	E-Pathshala, BHIM
2	10 Feb-15 Feb	e-Kranti (Electronic Delivery of Services), e-Health Campaigns
3	17 Feb-22 Feb	Public utility portals of Govt. of India such as RTI, Health
4	24 Feb-28 Feb	Finance, Income Tax filing, Education. Test-1, Assignment-1
Week	**March25/Duration**	**Topic-** Unit-III
1	01 March-08 March	**Electronic Communication:** Electronic mail, blogs, social media
2	17 March-22 March	Tools/platforms for online learning
3	24 March- 31 March	Collaboration using file sharing, messaging, video conferencing, Assignment-2
Week	**April25/Duration**	**Topic-** UNIT-IV
1	01 April -05 April	**Safe and Secure Cyberspace:** Online security and privacy,
2	07 April -12 April	Data breach and Cyber Attacks
3	14 April -19 April	Security Initiatives by the Govt of India
4	21 April-26 April	Ethics in Cyberspace, Test-2
5	28 April-30 April	Revision.

Lesson Plan

Name of Teacher: Dr. Monika	**Class:** B.A./B. Sc. VI Sem	**Session:** 2024-25
Subject: Computer Science	**Nomenclature of Paper:** Python Programming	**Paper Code:** BACS-322/CCsL-604
Week	**Jan 25/Duration**	**Topic-** Unit-I
1	01 Jan-04 Jan	Discussion on Programming Languages
2	06 Jan-11 Jan	**Introduction to Python**: History and Features of Python Programming, Interpreter, Variable, Identifiers and literal, Token, Keyboard, Data Types,
3	12 Jan-18 Jan	**Operators:** Arithmetic operators, Relational Operators, Logical Operators, Comment, Indentation, Need for Indentation
4	19 Jan-25 Jan	**Built-in-Functions**: input, eval, composition, print, type, round, min and max
5	27 Jan-31 Jan	Type Conversion, Random Number Generation, Mathematical Functions, Getting help on a function, Assert Statement. Assignment-1.
Week	**Feb25/Duration**	**Topic-** Unit-II
1	01 Feb-08 Feb	**Control Statement**: if conditional statement, for and while statement, break, continue and pass statement. Test-1
2	10 Feb-15 Feb	**Functions**: Function Definition and Call.
3	17 Feb-22 Feb	**Function Arguments**-Variable Function Arguments, Default Arguments, Keyword Arguments, Arbitrary Arguments, Command Line Arguments.
4	24 Feb-28 Feb	**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.
Week	**March25/Duration**	**Topic-** Unit-III
1	01 March-08 March	Assignment 2, **String:** String as a compound data type, String Operations- Concatenation, Repetition, Membership Operation, Slicing Operation.
2	17 March-22 March	**String Methods**: Count, find, rfind, capitalize, title, lower, upper, swapcase, islower, isupper, istitle, replace, isalpha, isdigit, isalnum, String Processing examples.
3	24 March- 31 March	**Lists: List Operations-**Multiplication, Concatenation, length, indexing, slicing, min, max, sum, membership, operator**; List functions**- append, extend, remove, pop, count, index, insert, sort, reverse.
Week	**April25/Duration**	**Topic-** UNIT-IV
1	01 April -05 April	**Recursion**: Recursive solution for problems on Numbers, String and list.
2	07 April -12 April	**Object Oriented Programming:** Introduction to Classes, Method, Class Object, Instance object, Method object, Class as abstract data type, Data Class
3	14 April -19 April	**Access attributes using functions**-getattr, hasattr, setattr, delattr, Built-in Class Attributes of Class objects (-dict__doc_, _name_, module_),
4	21 April-26 April	**Graphics: Screen Objects-** Point and line, box, polygon, circle, arc. **Screen Objects Methods**- move_to(), move_by(), Text(), **Sound**-Sound(), play_sound(), stop_sound().
5	28 April-30 April	Test-2. Back log of chapter if any, discussion, and problems taken.

Lesson Plan

Name of Teacher: Dr. Monika	**Class:** B.A./B. Sc. VI Sem	**Session:** 2024-25
Subject: Computer Science	**Nomenclature of Paper:** Computer Graphics	**Paper Code:** BACS-321/CCsL-603
Week	**Jan 25/Duration**	**Topic-** Unit-I&II
1	01 Jan-04 Jan	Historical Perspective of Computer Graphics, Basic elements of Computer Graphics (Modelling, Rendering, Animation), Applications of Computer Graphics
2	06 Jan-11 Jan	Input Devices: Keyboard, Mouse, Light Pen, Graphic Table, Joystick, Trackball, Flatbed Scanner.
3	12 Jan-18 Jan	Hard Copy Devices: Laser Printer, Flatbed Plotters.
4	19 Jan-25 Jan	Video Display Devices: Pixel, Resolution, Aspect Ratio, Refresh Rate and Interlacing, Cathode Ray Tube
5	27 Jan-31 Jan	Flat Panel Display- LCD and Plasma Panel
Week	**Feb25/Duration**	**Topic-** Unit-II&III
1	01 Feb-08 Feb	Raster and Random Scan Display
2	10 Feb-15 Feb	Fundamental Techniques in Graphics: Line Generation Algorithms-DDA Algorithm, Bresenham's Algorithm.
3	17 Feb-22 Feb	Circle Generation Algorithm- Bresenham's Algorithm and Midpoint Circle Algorithm.
4	24 Feb-28 Feb	Polygon Filling Algorithms-Scan Line Algorithm,
Week	**March25/Duration**	**Topic-** Unit-III
1	01 March-08 March	Viewing & Clipping- Point Clipping
2	17 March-22 March	Line Clipping, Cohen-Sutherland Line Clipping Algorithm
3	24 March- 31 March	Polygon Clipping (Sutherland Hodgman Algorithm). Numerical Problems
Week	**April25/Duration**	**Topic-** UNIT-IV
1	01 April -05 April	2- Dimensional Graphics: Cartesian and Homogeneous Co-Ordinate System
2	07 April -12 April	Geometric Transformation (Translation, Scaling Rotation, Reflection).
3	14 April -19 April	3- Dimensional Transformation: Geometric Transformation (Translation, Scaling, Rotation, Reflection)
4	21 April-26 April	Mathematics of Projection (Parallel & Perspective).
5	28 April-30 April	Test-2. Back log of chapter if any, discussion, and problems taken.