Curriculum plan (Odd Semester 2023-24)

Paper name: Data Structures

Class type: BSc. Physical Science V semester

Paper shared with: - Dr. Nidhi Arora

Teacher Name: Neha Singh

S.No	Schedule (Approximate)	Topic
1	**August**	**Unit 1 Array and Sorting** **Array:** Single and Multi-dimensional Arrays, Sparse Matrices **Searching**: Linear and Binary Search **Sorting**: Insertion sort, Bubble, Selection,
2	**September**	**Unit 1 Array and Sorting** **Sorting**: Quick and Merge Sort **Unit 4 Linked Lists**: Singly, Doubly and Circular Lists, implementing stack and queue using linked lists. **Unit 2 Stacks**: Implementing stack using arrays. *Quiz, Test, Assignment 1*
3	**October**	**Unit 2 Stacks**: Prefix, Infix and Postfix expressions, application of stacks for conversion of infix to prefix and postfix expressions, evaluation of postfix expressions **Unit 3 Queues**: Implementing simple queue, circular queues and priority queues using array **Unit 4 Linked Lists**: Implementing queue using linked lists. *Quiz, Test, Assignment 2*
4	**November**	**Unit 5 Recursion**: Recursive solutions to simple problems and their implementation, advantages and limitations of recursion **Unit 6 Trees**: Introduction to Tree as a data structure; Binary Trees, Binary Search Tree, Binary Search Tree, (Creation, and Traversals of Binary Search Trees) *Test, Presentation*

5	**December**	*Revision,*

References

1. Adam Drozdek, "Data Structures and algorithm in C++", 4th Edition, Cengage Learning, 2019.
2. Sartaj Sahni, “Data Structures, Algorithms and applications in C++", Second Edition, Universities Press, 2011.
3. Aaron M. Tenenbaum, Moshe J. Augenstein, YedidyahLangsam, "Data Structures Using C and C++:, Second edition, PHI, 2009.

Name of teacher: Neha Singh