DEPARTMENT OF COMPUTER SCIENCE

Dyal Singh College, University of Delhi

(ACADEMIC SESSION, 2023-24)

Course: B.Sc(H) Computer Science (Part 2/3 Semester)
Paper Code and Name: Data Structures (TH/PR)

FACULTY

Name of Teacher: Ms. SAPNA GROVER
Contact: **Email**: sapnagrover@dsc.du.ac.in

ASSESSMENT DETAILS

Total Marks for the course is 120, comprising following components

- **CA - 0**
- **IA - 30**

TEACHING PLAN

Week	Topics Covered/ Assignments/ Test/Presentations
1-2	Growth of Functions, Recurrence Relations
3-4	Arrays, Linked Lists
5-6	Stacks, Queues, Deques
7-8	Recursion, Assignment
9-10	Trees, Binary trees, Class Test
11-12	Binary Search Trees
13-14	Balanced Search Trees
15-16	Balanced Search Trees

DEPARTMENT OF COMPUTER SCIENCE

Dyal Singh College, University of Delhi

(ACADEMIC SESSION, 2023-24)

Course: B.Sc(H) Computer Science (Part 1/1 Semester)

Paper Code and Name: Mathematics for Computing (2342011103) (TH/PR)

FACULTY

Name of Teacher: Ms. SAPNA GROVER

Contact: **Email**: sapnagrover@dsc.du.ac.in

ASSESSMENT DETAILS

Total Marks for the course is 120, comprising following components

- **CA - 0**
- **IA - 30**

TEACHING PLAN

Week	Topics Covered/ Assignments/ Test/Presentations
1-2	Introduction to Matrix Algebra: Echelon form of a Matrix, Rank of a Matrix, Determinant and Inverse of a matrix
3-4	Solution of System of Homogeneous & Non-HomogeneousEquations: Gauss elimination and Gauss Jordan Method.
5-6	Vector Space, Sub- spaces, Linear Combinations, Linear Span, Linear Independence/ Dependence, Basis & Dimension, Linear transformation on finite dimensional vector spaces
7-8	Inner Product Space, Schwarz Inequality, Orthonormal Basis, Gram-Schmidt Orthogonalization Process, Convex Sets Assignment
9-10	EigenValue and EigenVector:Characteristic Polynomial, Cayley Hamilton Theorem (Only in numericals), Eigen Value And eigen vector of a matrix, eigenspaces, Diagonalization
11-12	Positive Definite Matrices, Applications to Markov Matrices Class Test
13-14	Vector Calculus: Vector Algebra, Laws of Vector Algebra, Dot Product, Cross Product, Vector and Scalar Fields, Ordinary Derivative of Vectors, Space Curves, Partial Derivatives, Del Operator
15-16	Gradient ofa Scalar Field, Directional Derivative, Gradient of Matrices, Divergence of a Vector Field, Laplacian Operator, Curlof a Vector Field.