Department of Information Technology

LESSON PLAN

Subject: Discrete Mathematics   **Subject code: PC-IT-204A**

Session: 2022-23   **Semester: IV**

SNo	Topic	No. of Lectures required	CO Covered	Teaching Methodology
1	**Unit-1** Introduction to Set Theory	1	CO1	Chalk & Talk
2	Operation on sets and Venn diagrams	1		Chalk & Talk
3	The Principle of Incluusion-Exclusion and related problems	1		Chalk & Talk
4	Mathematical Induction	1		Chalk & Talk
5	Introduction to Logics	1		Chalk & Talk
6	Propositions, Logical operations and Truth tables	2		Chalk & Talk
7	Equivalence and Implications	2		Chalk & Talk
8	Normal forms, Predicates and Quantifiers	2		Chalk & Talk
9	**Unit 2** Product sets and Partitions	1	CO2	Chalk & Talk
10	Relations and Properties of Relations	1		Chalk & Talk
11	Diagraphs and Paths in Relations and Diagraphs	1		Chalk & Talk
12	Equivalence and Partially ordered Relations	1		Chalk & Talk
13	Representations of Relations and Diagraphs	1		Chalk & Talk
14	Manipulation of Relations	1		Chalk & Talk
15	Transitive Closure and Warshall's Algorithm	2		Chalk & Talk
16	Posets and Hasse Diagrams	1		Chalk & Talk
17	Lattice and its properties	2		Chalk & Talk
18	**Unit 3** Definition and Types of Functions	1	CO3	Chalk & Talk
19	Composition and Inverse of a Function	1		Chalk & Talk
20	Permutation and Combination	2		Chalk & Talk
21	Pigeon hole Principle	1		Chalk & Talk
22	Principle of Inclusion and Exclusion	1		Chalk & Talk
23	Generating functions-Recurrence relations	2		Chalk & Talk
24	**Unit 4** Introduction to Binary operations and Algebraic structures	1	CO4	Chalk & Talk
25	Semi-groups, Monoids and Groups	1		Chalk & Talk
26	Product and Quotient of Algebraic structures	1		Chalk & Talk
27	Homomorphism	1		Chalk & Talk
28	Isomorphism	1		Chalk & Talk
29	Automorphism	1		Chalk & Talk
30	Cyclic Groups	2		Chalk & Talk

31	Normal Subgroups	2		Chalk & Talk
32	Ring homomorphism	1		Chalk & Talk
33	Ring Isomorphism	1		Chalk & Talk
34	Codes and Group Codes	3		Chalk & Talk