SRINIVAS UNIVERSITY
COLLEGE OF ENGINEERING & TECHNOLOGY

TEACHING/LESSON PLAN(Odd Semester 2020-2021)

(Computer science Branch)

Subject Code		**19SCS41**	**Title**	**DISCRETE MATHEMATICAL STRUCTURES AND GRAPH THEORY**		**Class**	**IV Semester**		
Prerequisites		Prepare for a background in abstraction, notation, and critical thinking for the mathematics most directly related to computer science		**Prepared by**		**Rajeshwari Shibaraya**			
Credits	**04**	**Hours/week**	**L-T-P: 4-0-0**	**CIE Marks**	**50**	**SEE Marks**	**50**	**Total Hours**	**50**

Hour No.	Date	Topic to be covered	Mode of Delivery	Text/ Reference book
1	21/03/2022	**MODULE -1:Introduction: Fundamentals of Logic**	Chalk & talk	T1, T2
2	23/03/2022	Logic Equivalence, Tautology, Contradiction	Chalk & talk	T1, T2
3	25/03/2022	The Laws of Logic	Chalk & talk	T1, T2
4	26/03/2022	Logical Implication	Chalk & talk	T1, T2
5	26/03/2022	Connectives NAND and NOR	Chalk & talk	T1, T2
6	28/03/2022	Rules of Inference	Chalk & talk	T1, T2
7	30/03/2022	The Use of Quantifiers, open statement Quantifiers	Chalk & talk	T1, T2
8	26/03/2022	Logical Implication involving Quantifiers	Chalk & talk	T1, T2
9	01/04/2022	Definitions and the Proofs of Theorems	Chalk & talk	T1, T2
10	04/04/2022	Statement with more than one variable	Chalk & talk	T1, T2
11	06/04/2022	**MODULE -2: Properties of the Integers**	Chalk & talk	T1, T2
12	08/04/2022	Mathematical Induction	Chalk & talk	T1, T2
13	09/04/2022	The Well Ordering Principle	Chalk & talk	T1, T2
14	11/04/2022	Well Ordering Principle –Mathematical Induction	Chalk & talk	T1, T2
15	13/04/2022	Recursive Definitions	Chalk & talk	T1, T2
16	16/04/2022	Fundamental Principles of Counting	Chalk & talk	T1, T2
17	25/04/2022	The Rules of Sum and Product	Chalk & talk	T1, T2

18	27/04/2022	Permutations, Combinations	Chalk & talk	T1, T2
19	29/04/2022	The Binomial Theorem	Chalk & talk	T1, T2
20	30/04/2022	Combinations with Repetition,	Chalk & talk	T1, T2
21	02/05/2022	**MODULE -3:** **Relations and Functions**	Chalk & talk	T1, T2
22	04/05/2022	Cartesian Products and Relations	Chalk & talk	T1, T2
23	06/05/2022	Functions	Chalk & talk	T1, T2
24	07/05/2022	Plain and One-to-One functions	Chalk & talk	T1, T2
25	09/05/2022	Onto Functions	Chalk & talk	T1, T2
26	11/05/2022	The Pigeon-hole Principle,	Chalk & talk	T1, T2
27	13/05/2022	Properties of Relations	Chalk & talk	T1, T2
28	14/05/2022	Computer Recognition – Zero-One Matrices and Directed Graphs,	Chalk & talk	T1, T2
29	16/05/2022	Partial Orders – Hasse Diagrams,	Chalk & talk	T1, T2
30	18/05/2022	Equivalence Relations and Partitions.	Chalk & talk	T1, T2
31	20/05/2022	**MODULE -4:** **The Principle of Inclusion and Exclusion**	Chalk & talk	T3, R2
32	21/05/2022	Introduction to the Principle of Inclusion and Exclusion ,	Chalk & talk	T3, R2
33	23/05/2022	Generalizations of the Principle	Chalk & talk	T3, R2
34	26/05/2022	Derangements – Nothing is in its Right Place	Chalk & talk	T3, R2
35	27/05/2022	Rook Polynomials.	Chalk & talk	T3, R2
36	28/05/2022	Recurrence Relations	Chalk & talk	T3, R2
37	30/05/2022	First Order Linear Recurrence Relation	Chalk & talk	T3, R2
38	01/06/2022	First Order Linear Recurrence Relation & its problems	Chalk & talk	T3, R2
39	03/06/2022	The Second Order Linear Homogeneous Recurrence Relation with Constant Coefficients.	Chalk & talk	T3, R2
40	04/06/2022	The Second Order Linear Homogeneous Recurrence Relation with Constant Coefficients & its problems	Chalk & talk	T3, R2
41	06/06/2022	**MODULE-5:** **Introduction to Graph Theory**	Chalk & talk	T1, T2

42	08/06/2022	Definitions and Examples on graph theory	Chalk & talk	T1, T2
43	10/06/2022	Sub graphs, Vertex Degree	Chalk & talk	T1, T2
44	11/06/2022	Complements	Chalk & talk	T1, T2
45	13/06/2022	Graph Isomorphism	Chalk & talk	T1, T2
46	15/06/2022	Euler Trails and Circuits	Chalk & talk	T1, T2
47	17/06/2022	Trees, Definitions, Properties,	Chalk & talk	T1, T2
48	18/06/2022	Routed Trees, and Examples	Chalk & talk	T1, T2
49	20/06/2022	Trees and Sorting	Chalk & talk	T1, T2
50	22/06/2022	Weighted Trees and Prefix Codes	Chalk & talk	T1, T2

**** New time table and Dates for offline classes**

TEXT/REFERENCE BOOKS:

T/R	BOOK TITLE/AUTHORS/PUBLICATION
T1	Ralph P. Grimaldi: Discrete and Combinatorial Mathematics, , 5th Edition, Pearson Education
T2	Basavaraj S Anami and Venakanna S Madalli: Discrete Mathematics – A Concept based approach, Universities Press, 2016 .
T3	Kenneth H. Rosen: Discrete Mathematics and its Applications, 6th Edition, McGraw Hill, 2007.
R1	Jayant Ganguly: A Treatise on Discrete Mathematical Structures, Sanguine-Pearson, 2010.
R2	D.S. Malik and M.K. Sen: Discrete Mathematical Structures: Theory and Applications, Thomson,

Faculty Member **HOD**

Date: 15/02/2021