SREE VIDYANIKETHAN ENGINEERING COLLEGE
(Autonomous)
Sree Sainath Nagar, A. Rangampet-517 102

Department of Computer Science and Engineering

Lesson Plan cum Diary 2015-'16

Name of the Subject   : **DISCRETE MATHEMATICAL STRUCTURES** (14BT31201)

Name of the faculty Member   :

Class & Semester   : **II B.Tech I Semester** (CSE)

Section   :

S. No.	Topic	No. of periods required	Date(s) covered	No. of periods used	Book(s) followed	Remarks	Self Learning Concepts
Unit-I: MATHEMATICAL LOGIC AND PREDICATES							
1.	Statements and notations, Connectives	1			T1		Identify the basic application of automatic theorem proving
2.	Well Formed Formulae &Truth Tables, Tautology	1			T1		
3.	Diagnostic &Equivalence of formulae	1			T1		
4.	Tutorial-1	1					
5.	Normal Forms-CNF, DNF	1			T1		
6.	PCNF&PDNF	1			T1		
7.	Predicate Calculus, Free And Bound Variables	1			T1		
8.	Tutorial-2	1					
9.	Rules of Inference& Rules of Consistency	1			T1		
10.	Proof of Contradiction	1			T1		
11.	Automatic Theorem Proving	1			T1		
12.	Tutorial-3	1					
13.	Formative Test-1	1					
Total no of periods required:		**13**	Total no of periods used:				
Unit-II: FUNCTIONS AND RELATIONS							
14.	Properties of Binary Relations	1			T1		Examine special types of lattices
15.	Equivalence Relations, Compatibility Relations	1			T1		
16.	Tutorial-4	1					
17.	Partial ordering Relations	1			T1		
18.	Hasse diagram and its applications	1			T1		
19.	Lattice and its properties	1			T1		
20.	Tutorial-5	1					
21.	Function, Inverse Function	1			T1		

| 22. | Composition of function | 1 | | | T1 | | |

23.	Formative Test-2 & Recursive Functions	1			T1		
24.	Tutorial-6	1					
	Total no of periods required:	**11**		Total no of periods used:			
	Unit-III: Algebraic Structures						
25.	Algebraic System-example	1			T1		
26.	General Properties	1			T1		
27.	Semi-Groups& Monoids	1			T1		
28.	Tutorial-7	1					Study Cyclic groups
29.	Groups & Sub-groups	1			T1		
30.	Homomorphism	1			T1		
31.	Isomorphism & Formative Test-3	1			T1		
32.	Tutorial-8	1					
	Total no of periods required:	**08**		Total no of periods used:			
	Unit-IV: : MATHEMATICAL REASONING AND RECURRENCE RELATIONS						
33.	Methods of Proof, Mathematical Induction	1			T2		
34.	Counting: Basics of counting, Inclusion-Exclusion Principle	1			T2		
35.	Permutations and combinations	1			T2		
36.	Tutorial-9	1					
37.	Generalized Permutations & combinations	1			T2		(1)Study the advanced counting principles 2)Identify the advanced concepts on generating functions
38.	Generating Functions of Sequences	1			T2		
39.	Coefficients of Generating Functions	1			T2		
40.	Tutorial-10	1					
41.	Introduction to Recurrence Relations	1			T2		
42.	Solve Recurrence relations by Generating Functions	1			T2		
43.	Methods of Characteristic Roots	1			T2		
44.	Tutorial-11	1					
45.	Solutions of Inhomogenous Recurrence relations & Formative Test-4	1			T2		
	Total no of periods required:	**13**		Total no of periods used:			

	Unit-V: GRAPH THEORY AND ITS APPLICATION						
46.	Introduction to Graph and its types	1			T2		Apply the advanced graph based algorithm for graph coloring with 5 chromatic number
47.	Graph basic Terminology, Representation of Graphs	1			T2		
48.	Tutorial-12	1			T2		
49.	Graph Isomorphism ,Euler Paths and Circuits	1			T2		
50.	Hamiltonian Paths and Circuits	1			T2		
51.	Planar Graphs & Euler's Formula	1			T2		
52.	Tutorial-13	1					
53.	Graph Coloring,4-color	1			T2		
54.	Introduction to Trees and its Properties, Application of trees	1			T2		
55.	Spanning and minimum cost spanning trees	1			T2		
56.	Tutorial-14	1					
57.	Formative Test-5	1					
Total no of periods required:		**11**	**Total no of periods used:**				
Grand total of periods required:		**57**	**Grand total of periods used:**				

Note: Difference between N and M should be within 5%.

TEXT BOOKS:

T1. J.P. Trembly and R. Manohar, **"Discrete Mathematical Structures with Applications to Computer Science",** Tata McGraw Hill, 2001.

T2. Kenneth H. Rosen, **"Discrete Mathematics and its Applications",** Tata McGraw Hill, 6th edition, 2007.

REFERENCE BOOKS:

R1. Joe L.Mott and Abraham Kandel, **"Discrete Mathematics for Computer Scientists and Mathematicians",** Prentice Hall of India Private Limited, 2nd edition, 2004.

R2. Ralph P. Grimaldi and B.V.Ramana, **"Discrete and Combinatorial Mathematics- an Applied Introduction",** Pearson Education, 5th edition, 2006.

Signature of the Faculty Member **Signature of the Course Coordinator** **Signature of the HOD**