



Yashoda Shikshan Prasarak Mandal's
YASHODA TECHNICAL CAMPUS, SATARA
FACULTY OF ENGINEERING
 NH-4, Wadhe Phata, Satara, Tele Fax- 02162-271238/39/40
 Website- www.yspmsatara.co.in Email-admin@yspmsatara.co.in
 Approved by AICTE- New Delhi, Govt. of Maharashtra (DTE, Mumbai)
 Affiliated to DBATU Lonere.



DEPARTEMENT OF COMPUTER SCIENCE AND ENGINEERING

Teaching Learning and Assessment Plan

Name of Faculty: Mrs. R. M. Mandhare

Subject: Discrete Mathematics(24AF1245PC303)

Semester: III

Class: S. Y. B. tech [CSE]

Div: A

Academic Year: 2025-26

Planned Duration: 03-03-2025 to 20-06-2025

Course outcome: After completing the course students will able to

BTCOC303_1	To understand propositional logic and operations on set, functions, relation, graph tree, algebraic systems	Reference Books: Text Book: 1. C. L. Liu, Elements of Discrete Mathematics, McGraw-Hill Publication, 3rd Edition, 2008 Reference Books: 1. Lipschutz, Discrete Mathematics, McGraw-Hill Publication, 3rd Edition, 2009. 2. V. K. Balakrishnan, Schaum's Outline of Graph Theory, McGraw-Hill Publication, 1st Edition, 1997. 3. Eric Gossett, Discrete Mathematics with Proof, Wiley Publication, 2nd Edition, 2009. 4. Kenneth H. Rosen, Discrete Mathematics and its Applications, McGraw-Hill Publication, 6th Edition, 2010. 5. Y. N. Singh, Discrete Mathematical Structures, Wiley Publication, 1st Edition, 2010.
BTCOC303_2	To solve problems using operations on sets, functions, relations, counting techniques and generating function	
BTCOC303_3	Analyze various algorithms and use of graphs, trees as tools to visualize and solve problems.	
BTCOC303_4	Apply concept of algebraic structures, morphism and Boolean algebra to solve mathematical and logical problems.	

Unit	Lecture No.	Lesson Plan	Duration	Planned Date	Conduction Date	TM	TA	AT	Reference Book	Mapping with Outcomes	
		Content Delivery								CO	PO

Vision of the Department

To lead in technical, quality education, innovation, research for development of sustainable & inclusive technology for the society.

Mission of the Department

1. To create ambience of academic excellence through state of art infrastructure. 2. To create student-centric pedagogy that will lead to employability. 3. To create a software engineering professional with knowledge of multidisciplinary fields, can provide innovative products & service to society. 4. To train and motivate the students for lifelong learning, employability, and entrepreneurship.



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	1	Discussion on Vision, Mission, and CO's of the Course	1 Hour								
I	2	Propositions, truth values, Truth tables for operators,	1 Hour			LT	CB, PPT	CA, MSE, ESE	1	CO1	
	3	Truth Tables of Compound Propositions, Precedence of Logical Operators.	1 Hour						1		
	4	Propositional Equivalences: Logical Equivalences, Constructing New Logical Equivalences, Normal Forms.	1 Hour						1		
	5	Predicates, Quantifiers: Universal and Existential, Quantifiers with Restricted Domains, Negating Quantified Expressions,	1 Hour						1		
	6	Precedence of Quantifiers, Binding Variables, Logical Equivalences Involving Quantifiers,	1 Hour						1		
	7	Translating from English into Logical Expressions, Examples from Lewis Carroll,	1 Hour						1		
	8	Valid Arguments in Propositional Logic, Rules of Inference for Propositional Logic,	1 Hour						1		
	9	Using Rules of Inference to Build Arguments, Resolution, Fallacies.	1 Hour						1		
II	10	Sets, Venn Diagrams, Subsets, The Size of a Set, Power Sets, Cartesian Products	1 Hour						1		
	11	ations, Set Identities, Generalized Unions and Intersections, Cardinality of Sets	1 Hour						1		

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	12	Functions: Introduction, Subjective, Injective, Bijective	1 Hour			LT	CB, PPT	CA, MSE, ESE	1	CO2	
	13	Inverse functions, Composition of functions.	1 Hour						1		
	14	Relations and Their Properties,	1 Hour						1		
	15	n-ary Relations and Their Applications, Representing Relations	1 Hour						1		
	16	Closures of Relations, Equivalence Relations,	1 Hour						1		
	17	Equivalence classes and partitions, Partial Ordering,									
	18	Hasse Diagram, Topological Sort.	1 Hour						1		
	19	CAS Activity-1									
III	20	Counting	1 Hour			LT	CB, PPT	CA, MSE, ESE	1	CO3	
	21	Permutations. examples on it	1 Hour						1		
	22	Combinations examples on it	1 Hour						1		
	23	Applications of Recurrence Relations	1 Hour						1		

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	24	Applications of Recurrence Relations	1 Hour					1		
	25	Solving Linear Recurrence Relations.	1 Hour					1		
	26	Solving Linear Recurrence Relations.	1 Hour					1		
IV	27	Some Special Simple Graphs, Bipartite Graphs, New Graphs from Old	1 Hour			LT	CB, PPT	CA, MSE, ESE	1	CO4
	28	Shortest path problems,	1 Hour						1	
	29	Euler and Hamiltonian paths, Isomorphic graphs,	1 Hour						1	
	30	Planar graphs, Connectivity, Matching Coloring	1 Hour						1	
	31	Trees: Prefix Codes, Huffman coding	1 Hour						1	
	32	Spanning trees and cut sets, Minimal spanning trees,.	1 Hour						1	
	33	Kruskal's and Prim's algorithms for minimal spanning trees	1 Hour						1	
	34	CAS Activity-II								
V	35	Algebraic Structures with one Binary Operation, Semi Groups, Monoids,	1 Hour						1	

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36	Groups, Congruence Relation and Quotient Structures,	1 Hour			LT	CB, PPT	CA, MSE, ESE	1	CO5
37	Free and Cyclic Monoids and Groups, Permutation Groups, Substructures, Normal Subgroups	1 Hour						1	
38	Algebraic Structures with two Binary Operation, Rings, Integral Domain and Fields,	1 Hour						1	
39	Boolean Algebra and Boolean Ring.	1 Hour						1	

Note: TM-Teaching Method- Lecture (LT), Laboratory Visit (LV) TA-Teaching Aids Chalk Board (CB), Power Point Presentation (PPT), Models (MD) AT-Assessment Tool–Assignments (AS), Examinations (CA, MSE, ESE), Rubrics (RB)

Mode of Assessment

Mode	Assessment Tool	Syllabus	CO Mapped	Mark Weightage	Remark
	Puzzle Test	Unit-1	CO1	10M	The maximum weightage shall be of 20 Marks as per University Structure
CA	Spine wheel of set relation and function	Unit 2,3	CO1, CO2	10M	
	Assignment	Unit-4	CO3	10M	

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	Model/chart from waste material	Each Unit	CO1, CO2,CO3,CO4	10M	
MSE	Written Exam	50% of Syllabus	CO1, CO2, CO3	20M	The maximum weightage shall be of 20 Marks
ESE	Written Exam	On entire syllabus of DM	CO1, CO2, CO3, CO4,	60M	The weightage of shall be of 60 marks on entire syllabus

Course Coordinator

Academic Coordinator

HOD

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