Part A: Introduction			
Program: Bachelor in Science (Degree/Honors)		Semester – V	Session:2024-2025
1	Course Code	MSE-4	
2	Course Title	Discrete Mathematics	
3	Course Type	Discipline Specific Elective (DSE)	
4	Pre-requisite (if any)	Basic idea of Sets, Relations, Functions and Binary Operations.	
5	Course Learning Outcome (CLO)	This Course will enable the students to: ➢ Understand logic and logic operations, Quantifiers, Arguments and Predicates. ➢ The course aims at introducing the concepts of Lattices, sub Lattices and Homomorphism between Lattices. ➢ Understand the Concepts and uses of Boolean algebra in daily life.	
6	Credit Value	4 C	1Credit =15 hours-Learning and Observation
7	Total Marks	Maximum Marks : 100	Minimum Passing Marks:40

Part B: Content of the Course		
Total no of teaching – learning period =60 Periods (60 Hours)		
UNIT	Topics	No of Periods
I	Statements, Symbolic representation, Tautologies, Contradictions, Duality, Operations, Quantifiers, Arguments, Predicates and validity, Propositional logic.	15
II	Partially ordered set, Hasse diagram, chain and anti-chain, minimal and maximal element, Least upper bound and greatest lower bound, Lattices as partially ordered sets and their properties, Duality.	15
III	Lattices as Algebraic systems, Sub lattices, Direct products, and homomorphism and Isomorphism, Bounded, Complete, Complimented, Modular and distributive Lattices	15
IV	Boolean Algebras, Duality, Sub Algebra, Homomorphism and Isomorphism of Boolean Algebra, Boolean Algebras as lattices. Boolean Function and expression, Minimization of Boolean functions, Atoms, min-terms and Max-terms, Boolean forms. Algebra of switching circuits.	15

18/9/24

Part C - Learning Resource
Text Books, Reference Books, Other Resources
1. M.K. Gupta.Discrete Mathematics.Krishna Prakashan Media(P) Ltd 2. J.P. Tremblay & R. Manohar, Discrete Mathematical Structures with Applications to Computer Science, McGraw-Hill Book Co. New York. 3. C.L. Liu, Elements of Discrete Mathematics, McGraw-Hill Book Co. 4. S. Wiitala Discrete mathematics McGraw-Hill Book Co. New York **E-Recourses:** https://onlinecourses.nptel.ac.in https://epgp.inflibnet.aci.in https://swayam.gov.in https://www.mooc.org

Part D: **Assessment and Evaluation**		
Suggested Continuous Evaluation Methods: **Maximum Marks:** **100 Marks** **Continuous Comprehensive Evaluation (CCE):** **20 Marks.** **Semester End Exam (SEE):** **80 Marks**		
Internal Assessment: Continuous Comprehensive Evaluation(CCE)	Internal Test -02 of 10 Marks each Assignment/Seminar-01 0f 10 Marks	Better marks out of two test + obtained marks in Assignment shall be considered against 20 marks
Semester End Exam (SEE)	Paper-**Two Section-A&B** Section-A: Objective and short answer type question-1x10+3x10= 40 Marks Section-B: Descriptive answer type question Module wise- 10x4 =40 Marks	

Name and signature of convener & members of BOS-

18/9/24