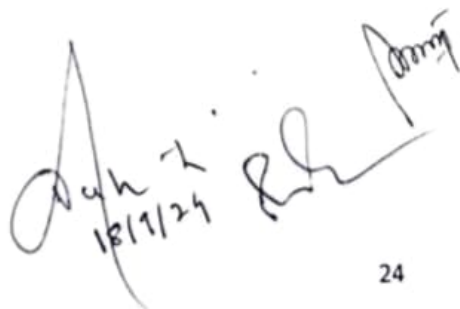


| Part A: Introduction | | | |
|---|----------------------------------|---|---|
| Program: Bachelor in Science (Degree/Honors) | | Semester – V | Session:2024-2025 |
| 1 | Course Code | MSE-4 | |
| 2 | Course Title | Discrete Mathematics | |
| 3 | Course Type | Discipline Specific Elective (DSE) | |
| 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: <ul style="list-style-type: none"> ➤ 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 | 1 Credit =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 |



 18/11/24



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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://cpqp.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 of 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-

