

Branch Name:	B.Sc. Mathematics
Program Code:	SC104
Course Name:	Business Mathematics-VI
Course Code:	2SC1040522
Pre-requisite Course:	

Course Objectives:

1. To understand the basic concept of Equivalence Relation.
2. To understand the concept of Binary operations.
3. To know about Boolean algebra.
4. To understand the concept of Homomorphism and Isomorphism of Boolean Algebras.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
2	--	--	2	35	15	--	--	50

Subject Contents:

Sr. No	Topic	Total Hours	Weightage (%)
1	Relations, Equivalence Relation, Equivalence classes or sets, Partial order Relations, Hasse Diagram, Upper and Lower Bounds, Minimal and Maximal elements, Binary operations, closure operations, Partially Ordered Set, Totally Ordered Set, Lattices as Posets, Dual Lattice, Meet and Join, Lattice as an algebraic structure, Direct Product Of two Lattices, Lattice Homomorphism, Lattice Isomorphism.	15	50
2	Sub-Lattice, Completed Lattice, Bounded Lattice, Distributive Lattice, Square Free Lattice, Complemented Lattice, Modular Lattice, De Morgan's Law, Boolean Algebra, Boolean Algebra of Switching Circuits, Sub Boolean Algebra, Homomorphism and Isomorphism of Boolean Algebras, Atoms, Unique representation Theorem, Properties Of Set of Atoms, Stone's representation Theorem.	15	50

Reference Books:

1. An Introduction To Discrete Mathematics -Udayan M.Prajapati, Dr.Ajay S. Gor, Nirav Prakashan
2. Discrete Mathematical Structures with Applications to Computer Science by Trembley I.P.And Mahonar R.
3. Discrete Mathematical Structures With applications to Computer Science by R. Hamming and E.A. Feigenbaum
4. Discrete Mathematical Structures for Computer Science by B. Kolman and R.C.Busy
5. The Essence of Discrete Mathematics by Neville Dean
6. Discrete Mathematics and its Applications with Combinatorics and Graph theory, by – Kenneth H. Rosen, McGraw Hill -2007 7th Edition.

List of Open Source Software/learning website:

1. <https://www.youtube.com/watch?v=h5Lv5ZeNl0g>
2. <https://www.youtube.com/watch?v=W0aOoC6rag8>
3. https://www.youtube.com/watch?v=KeOo4JcsE_0

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Describe Equivalence classes or sets.	1 Remembering
CLO2	Discuss the knowledge on Lattice Homomorphism and Lattice Isomorphism.	2 Understanding
CLO3	Use De Morgan's Law and using it solve the example of its.	3 Applying
CLO4	Explain Unique representation Theorem.	4 Analysing,
CLO5	Know the Stone's representation Theorem to Justify the application of its.	5 Evaluating
CLO6	Create an example of Equivalence Relation.	6 creating

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes (PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1		L								M			L	L		
CLO2		L							L	M			L			L
CLO3	M	L		L					H				L	L		
CLO4	M									L		L	M	M	L	
CLO5	M									L		L	M		L	
CLO6	M	L	H						H				L	L		

H: High, M: Medium, L: Low