STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

COURSE PLAN (November 2024 – April 2025)

Department : **Mathematics**

Name of the Faculty : **Dr. V. Jude Annie Cynthia**

Course Title : **Discrete Mathematics**

Course Code : **23MT/MC/DM43**

Shift : **I**

COURSE OUTCOMES (COs)

COs	Description	CL
CO1	acquire the knowledge of logical techniques and identify their applications	K1
CO2	recognize and apply the concepts of logic, lattices, Boolean algebra and Automata in related fields	K2
CO3	demonstrate the characterization of propositional calculus, lattices, Boolean functions and automata	K3
CO4	interpret the sets under study to apply in data structures and theory of computer languages	K4
CO5	assess the emerging fields to utilize the intrinsic concepts of discrete mathematics	K5

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Nov 18 – 25, 2024 (Day Order 1-6)	1 2	**Logic and Propositional Calculus** 1.1 Logical Equivalence 1.2 Algebra of Propositions **Lattices** 2.1 Lattice	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	Questioning & Slip Test

Nov 26- Dec 3, 2024 (Day Order 1 to 6)	1 2	**Logic and Propositional Calculus** 1.3 Arguments 1.4 Logical Implication **Lattices** 2.2 Properties of lattices	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Dec 4-11, 2024 (Day Order 1 to 6)	1 2	**Logic and Propositional Calculus** 1.5 Propositional Functions, Quantifiers **Lattices** 2.2 Properties of lattices	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Dec 12-19, 2024 (Day Order 1 to 6)	2	**Logic and Propositional Calculus** 1.6 Negation of Quantified Statements 1.7 Normal Forms **Lattices** 2.3 Lattices as Algebraic System	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	**III Component-1** Quiz (15 marks)
Dec 20, 2024	2	**Logic and Propositional Calculus**	K1-K5	1	CO1-5	Lecture, Discussions and Problem Solving	Questioning

(Day Order 1)		1.7 Normal Forms					
Jan 3 – 7, 2025 (Day Order 3 to 6)	2	**Logic and Propositional Calculus** **1.8** Normal Forms **Lattices** 2.4 Bounded, Complemented and Distributive lattices.	K1-K5	3	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Jan 8 – 17, 2024 (Day Order 1 to 6)	2 4	**Lattices** 2.4 Bounded, Complemented and Distributive lattices (contd.) **Finite State Automata** 4.1 Finite state machines	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	Questioning & Slip Test
Jan 18 - 23, 2025	**C.A. Test - I (UNIT 1 & 2)**						
Jan 24 -31, 2025 (Day Order 1 to 6)	3 4	**Boolean Algebra** 3.1 Basic properties of Boolean algebra **Finite State Automata** 4.2 Finite state automata	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Feb 3-8, 2025 (Day Order 1 to 6)	3 4	**Boolean Algebra** 3.2 Representation Theorem **Finite State Automata** 4.2 Finite state automata	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	Questioning

Feb 10– 18, 2025 (Day Order 1 to 4)	3 4	**Boolean Algebra** 3.3 Boolean Expressions **Finite State Automata** 4.4 Equivalence of DFSA and NDFSA	K1-K5	3	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Feb 19- 26, 2025 (Day Order 1-6)	3 5	**Boolean Algebra** 3.5 Boolean function **Languages and Grammars** 5.1 Languages and Regular expressions	K1-K5	4	CO1-5	Interactive Teaching & Problem Solving	Questioning & Slip Test
Feb 27- Mar 6, 2025 (Day Order 1 to 6)	3 5	**Boolean Algebra** 3.5 Boolean function **Languages and Grammars** 5.1 Languages and Regular expressions	K1-K5	4	CO1-5	Interactive Teaching & Problem Solving	**III Component-2** Test (20 marks)
Mar 7 – 11, 2025 (Day Order 1 to 3)	5	**Languages and Grammars** 5.2 Languages determined by FSA	K1-K5	2	CO1-5	Interactive Teaching & Problem Solving	Questioning
Mar 12 –17, 2025	**C.A. Test - II (UNIT 3 & 4)**						
Mar 18 – 20, 2025 (Day 4 to 6)	5	**Languages and Grammars** 5.3 Grammars	K1-K5	2	CO1-5	Interactive Teaching & Problem Solving	Questioning & Slip Test
Mar 21 - 28, 2025 (Day Order 1 to 6)	5	**Languages and Grammars** 5.4 Derivation trees for context free grammar	K1-K5	4	CO1-5	Interactive Teaching & Problem Solving	**III Component-3** Assignment (15 marks)

Mar 29- April 2, 2025 (Day Order 1 to 3)	**REVISION**						