UNIVERSITY OF MADRAS

M.A. DEGREE PROGRAMME IN PHILOSOPHY

SYLLABUS WITH EFFECT FROM 2023-2024

Subject Code	Subject Name	Category	L	T	P	S	Credits	Inst. Hours	Marks		
									CIA	External	Total
407E1B	**Logic for Computer Application**	Elective - II	Y	-	-	-	3	5	25	75	100

Learning Objectives	
1	To edify the students on the fundamentals of Digital and Multi-value Logic.
2	To train them in designing simple switching circuits
3	To know the basic theorems and postulates.
4	To understand the Logic Gate.
5	To introduce Fuzzy Logic
UNIT	**Details**
1	Digital Computer and Digital Systems
2	Binary Number Addition, Subtraction and Multiplication – Number bare Conversion –Switching Circuits and Binary Signals
3	Boolean Algebra: basic definitions – Closure – Associative Law – Commutative Law - Identity Elements: Inverse and Distributive Law – Two-valued Boolean Algebra – Basic Theorems and Properties of Boolean Algebra
4	The Definition of Logic Gate, Basic gates: And – or –not, Universal gates: NAND, NOR, Other gates: XOR & XNOR.The application of gates in designing simple switching circuits.
5	Fuzzy Logic, Classical Logic – Multi-valued logic – Fuzzy propositions – fuzzy quantities
Course Outcomes	
CO	On completion of this course, students will
1	The students understand the fundamentals of Multi-value Logic.
2	Train t in designing simple switching circuits
3	Understood the basic theorems and postulates.
4	Got introduced to the Logic Gate.
5	Understood Fuzzy Logic
Text Book	
1	M.Morris Mano, Digital Logic and Computer Design Prentice
2	George J.Klir / Boyuan, Fuzzy sets and Fuzzy Logic
3	P.Balasubramanian Symbolic Logic and Its Decision Procedures
4	Irving M. Copi and Carl Cohen, Introduction to Logic, 10th edition,
5	William J. Kilgore, An Introductory Logic

Reference Books	
1.	Mano, Digital Logic and Computer Design
2.	Michael Huth, Logic in Computer Science
3.	Huth and Ryan, Logic in Computer Science
4.	Jean Gallier, Logic for Computer Science: Foundations of Automatic Theorem Proving
5.	Schoning, Logic for Computer Scientists
Web Resources	
1.	https://www.sciencedirect.com/topics/computer-science/application-logic
2.	https://link.springer.com/book/10.1007/978-1-4612-0649-1

Mapping with Programme Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	1	1	1	1	1	1	1	1	2	1
CO 2	2	2	2	2	2	2	2	2	2	2
CO 3	3	3	3	3	3	3	3	3	3	2
CO 4	2	3	3	3	3	3	3	3	3	2
CO 5	2	3	3	3	3	3	3	3	3	2

Strong (3) Medium (2) Low (1)

Mapping with Programme Specific Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO6	PO7	PO8	PO9	PO10
CO 1	1	1	1	1	1	1	1	1	1	1
CO 2	2	2	2	2	2	2	2	2	2	2
CO 3	3	3	3	3	3	3	3	3	3	3
CO 4	3	3	3	3	3	3	3	3	3	3
CO 5	3	3	3	3	3	3	3	3	3	3
Weightage	12	12	12	12	12	12	12	12	12	12
Weighted percentage of course contribution to POS	5-0	5-0	5-0	5-0	5-0	5-0	5-0	5-0	5-0	5-0

Strong (3) Medium (2) Low (1)