

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI
COURSE PLAN June - November 2024

Department : MATHEMATICS
Name of the Faculty : Dr. V. DHANALAKSHMI
Course Title : FUZZY SETS AND APPLICATIONS
Course Code : 23MT/PE/FT15
Shift : 1

COURSE OUTCOMES (COs)

COs	Description	CL
CO1	recall and list key concepts and operations relating to fuzzy sets and number	K1
CO2	grasp the underlying principles behind various operations and understand the implications of applying these operations to model uncertainty	K2
CO3	apply the principles of fuzzy sets, including their operations, relations, and arithmetic, to solve practical problems in various domains	K3
CO4	analyse the implications of fuzzy operations, while considering their mathematical intricacies and practical consequences	K4
CO5	evaluate and critique the practical impact, limitations, and future potential of fuzzy sets and operations, and fuzzy logic applications in various domains	K5

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Jun 24 – 26, 2024 (Day Order 4 - 6)	1	Fuzzy Sets and Operations 1.1 Fuzzy Sets – Basic Concepts	K1-K5	2	CO1-5	Lecture	Questioning
Jun 27 – July 4, 2024 (Day Order 1 - 6)	1	Fuzzy Sets and Operations 1.2 Characteristics and Significance of the Paradigm Shift 1.3 Operations on Fuzzy Sets	K1-K5	5	CO1-5	Lecture	Slip Test
July 5 – 12, 2024 (Day Order 1 - 6)	1	Fuzzy Sets and Operations 1.4 Types of Fuzzy Sets 1.5 Properties of α – cuts	K1-K5	5	CO1-5	Visual Aids	Real World Examples
July 15 – 23, 2024 (Day Order 1 - 6)	2	Properties of Fuzzy Sets 2.1 Decomposition Theorems 2.2 Extension Principle for Fuzzy Sets	K1-K5	5	CO1-5	Lecture	Questioning
July 24 – 31, 2024 (Day Order 1 - 6)	2	Properties of Fuzzy Sets 2.3 Crisp and Fuzzy Relations – Binary Relations	K1-K5	5	CO1-5	Problem Solving	Workshops
Aug 1 – 5, 2024 (Day Order 1 - 3)	2	Properties of Fuzzy Sets 2.4 Fuzzy Relational Equations	K1-K5	3	CO1-5	Examples	Questioning
Aug 6 – 10, 2024	C.A. Test – I (Unit 1 and Unit 2 – 2.1, 2.2)						
Aug 12 – 14, 2024 (Day Order 4-6)	3	Operations on Fuzzy Sets 3.1 Fuzzy Complements	K1-K5	2	CO1-5	Lecture	Questioning
Aug 16 – 23, 2024 (Day Order 1-6)	3	Operations on Fuzzy Sets 3.2 Fuzzy Union 3.3 Fuzzy Intersection	K1-K5	5	CO1-5	Lecture	Real World Examples

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Aug 27 – Sep 3, 2024 (Day Order 1-6)	3 & 4	Operations on Fuzzy Sets 3.4 Combination of Operations Fuzzy Arithmetic 4.1 Fuzzy Numbers	K1-K5	5	CO1-5	Problem Solving	Problem Solving (20 marks) 2.2, 2.3, 3.1, 3.2
Sep 4 – 11, 2024 (Day Order 1-6)	4	Fuzzy Arithmetic 4.2 Linguistic Variables 4.3 Arithmetic Operation of Fuzzy Intervals	K1-K5	5	CO1-5	Visual Aids	Questioning
Sep 12 - 20, 2024 (Day Order 1-6)	5	Fuzzy System with Applications 5.1 Fuzzy Systems and Neural Networks	K1-K5	5	CO1-5	Presentation	Seminar-Unit 5 (20 marks)
Sep 23 - 26, 2024 (Day Order 1-4)	5	Fuzzy System with Applications 5.2 Fuzzy Systems and Genetic Algorithms	K1-K5	3	CO1-5	Presentation	Seminar
Sep 27 – Oct 3, 2024	C.A. Test – II (Unit 3 & 4 – 4.1, 4.2, 4.3)						
Oct 4 – 5, 2024 (Day 5 & 6)	4	Fuzzy Arithmetic 4.4 Arithmetic Operation of Fuzzy Numbers 4.5 Lattice of Fuzzy Numbers	K1-K5	2	CO1-5	Lecture	Questioning
Oct 7 - 15, 2024 (Day Order 1 to 6)	5	Fuzzy System with Applications 5.3 Current Applications	K1-K5	5	CO1-5	Presentation	Test– Unit 5 (10 marks)
Oct 16 - 22, 2024 (Day Order 1 to 6)	4	Fuzzy Arithmetic 4.6 Fuzzy Equations	K1-K5	5	CO1-5	Lecture	Questioning
Oct 23 - 24, 2024 (Day Order 1 to 2)	REVISION						