FUZZY MATHEMATICS

UNIT – I

Fuzzy sets – Basic types – Basic concepts – α-cuts – Additional properties of α-cuts – Extension principle for Fuzzy sets.

UNIT – II

Operations on Fuzzy sets – Types of operations – Fuzzy complements – t-Norms – Fuzzy Unions – Combinations of operations.

UNIT – III

Fuzzy Arithmetic – Fuzzy numbers – Arithmetic operations on intervals – Arithmetic operations on Fuzzy numbers.

UNIT – IV

Fuzzy relations – Binary fuzzy relations – Fuzzy equivalence relations – Fuzzy compatibility relations – Fuzzy ordering relations – fuzzy morphisms.

UNIT - V

Fuzzy Relation Equations – General discussion – Problem partitioning – Solution method – Fuzzy Relation Equations based on Sup-i Compositions - Fuzzy Relation Equations based on inf-ω_i Compositions.

TEXT BOOK

[1] George J.Klir and Bo Yuan, Fuzzy Sets and Fuzzy Logic, Prentice Hall of India, New Delhi, 2004.

REFERENCE(S)

[1] H.J. Zimmermann, Fuzzy Set Theory and its Applications, Allied Publishers Limited, New Delhi, 1991.
[2] G.J. Klir and B. Yuan, Fuzzy Sets and Fuzzy Logic, Prentice Hall of India, New Delhi, 1995.