

INTRODUCTION TO FUZZY MATHEMATICS AND ITS APPLICATIONS

UNIT-I

Fuzzy sets – introduction, Basic types and Basic concepts, Additional properties of α -cuts, Representation of fuzzy sets, Extension principles. 10 hrs

UNIT-II

Type of operators on fuzzy sets and fuzzy complements, Fuzzy intersection and fuzzy unions, Combination of operations. 10 hrs

UNIT-III

Fuzzy numbers and arithmetic operations on intervals, Arithmetic operations on fuzzy numbers, Fuzzy equations and fuzzy relations, Binary fuzzy relations and binary relation on a single set, Fuzzy equivalence relations. 10 hrs

UNIT-IV

Classification by equivalence relations-Crisp relations, Fuzzy relations, Cluster Analysis, Cluster Validity, c-means Clustering- Hard c-means(HCM), Fuzzy Means(FCM).

UNIT-V

Fuzzy Decision making – introduction, Conversion of linguistic variables to fuzzy numbers, Individual Decision Making, Multiperson decision Making, Multicriter decision Making, Fuzzy ranking methods. 10 hrs

Text Books

1. George J.Klir, Bo Yuan, Fuzzy Sets and Fuzzy logic – Theory and Applications, Prentice Hall India, New Delhi, 1997.

Reference Books

1. H.J Zimmermann, Fuzzy sets, Decision making and expert systems, Kluwer Bosten, 1987.
2. S.J. Chen and C.L.Hwang, Fuzzy Multiple Attributes Decision Making, Springer verlag, Berlin Heidelberg, 1992.

Mrs. Shweta
for Senate approval
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