

ADVANCED FUZZY MATHEMATICS AND ITS APPLICATIONS

Unit I

Fuzzy Arithmetics - Fuzzy number, Addition of fuzzy numbers, Subtraction of fuzzy numbers, Multiplication of fuzzy numbers, Division of Fuzzy numbers, Fuzzy Max and Fuzzy Min, L-R Fuzzy number, Triangular(or Trapezoidal) Fuzzy Number.

10 hrs

Unit II

Ranking Using Degree of Optimality - Baas and Kwakernaak's Approach, Watson et al.'s Approach, Baldwin and Guild's Approach, Yager's Approach, Kerre's approach, Adamo's Approach, Buckley and Chana's Approach, Mabuchi's Approach.

10 hrs

Unit III

Ranking using comparison function-Dubois and Prade's Approach, Ranking using Left and Right Scores – Jain's Approach, Chen's approach, Chen and Hwang's Approach, Ranking with Centroid Index-Yager's Centroid Index, Murakami et al.'s approach.

10 hrs

Unit IV

Fuzzy Simple Additive Weighting Methods –Dubois and Prade's Approach, Bonissone's Approach, Analytic Hierarchical Process Methods- Saaty's AHP Approach, Laarhoven and Pedrycz's Approach, Buckley's Approach.

10 hrs

Unit V

Maximin Methods – Bellman and Zadeh's Approach, Yager's Approach, A new approach to Fuzzy MADM problems-Converting Linguistic Terms to Fuzzy Numbers, Converting Fuzzy Numbers to Crisp scores, The Algorithm.

10 hrs

Text Books

1.S.J. Chen and C.L.Hwang, Fuzzy Multiple Attributes Decision Making, Springer verlag , Berlin Heidelberg, 1992.

Reference Books

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

2. B. Muller, J. Reinhardt M.T.Strickland, Neural networks – An introduction, Springer verlag, Berlin Heidelberg, 1995.

3. H.J Zimmermann, Fuzzy sets, Decision making and expert systems, Kluwer, Bosten, 1987.

a
approval
29/10/2022