I	Course Code	**MA 187003**
II	Course Title	**Introduction to Fuzzy Set theory and Fuzzy Logic**
III	Credit Structure	L T P C 3 1 0 4
IV	Prerequisite (If any)	NIL
V	Course Content	Concepts of crispness and fuzziness, crisp sets and fuzzy sets, α- cuts, convex fuzzy sets, operations on fuzzy sets, type-2 fuzzy sets, fuzzy numbers and extended operations on them, LR- representations of fuzzy sets and extended operations on them, t-norm and t-conorms, increasing and decreasing generators, interval equations, fuzzy equations, functions of fuzzy sets, extension principle, integration of fuzzy functions, fuzzy differentiation, chance verses fuzziness. Various forms of membership functions, fuzzification, defuzzification to crisp sets and scalars. Fuzzy measures and measures of fuzziness, linguistic variables, fuzzy logic, truth tables, approximate reasoning in support logic programming. Fuzzy decisions, fuzzy linear programming problems, fuzzy transportation problems, fuzzy dynamic programming, fuzzy multi-criteria analysis.
VI	Text/References	• Ross, T. J., "Fuzzy Logic with Engineering Applications", Wiley India Pvt. Ltd., 3rd Ed. • Zimmerman, H. J., "Fuzzy Set theory and its application", Springer, India Pvt. Ltd., 4th Ed. • Klir, G. and Yuan, B., "Fuzzy Set and Fuzzy Logic: Theory and Applications", Prentice Hall of India Pvt. Ltd. • Klir, G. and Folger, T., "Fuzzy Sets, Uncertainty and Information", Prentice Hall of India Pvt. Ltd.