

Semester II

Subject Name: Fuzzy Mathematics	Duration: 6 hrs /Cycle
Subject Code: 2PGM5(2015 on)	Credit : 4
Unit I: Crisp Sets and Fuzzy Sets: Introduction - Crisp Sets– The Notation of Fuzzy Sets- Basic Concepts of fuzzy sets- Classical Logic - Fuzzy Logic.	
Unit II: Operations on Fuzzy Sets: General discussion- Fuzzy Complements- Fuzzy Union - Fuzzy Intersection- Combinations of Operations- General Aggregation Operations.	
Unit III: Fuzzy Relations: Crisp and Fuzzy Relations- Binary Relations- Binary Relations on a Single Set- Equivalence and similarity Relations- Compatibility or tolerance Relations- Fuzzy Relation techniques.	
Unit IV: Fuzzy Measures: General discussion - Belief and Plausibility measures- Probability measures- Possibility and Necessity measures.	
Unit V: Uncertainty and Information: Types of uncertainty- Measures and Fuzziness- Classical measures and uncertainty- Management and Decision making.	

Text Book: Fuzzy Sets, Uncertainty and Information by George J. Klir and Tina A. Folger, Edition 2012, PHI.

Chapters: 1, 2, 3(3.1- 3.5, 3.8), 4(4.1- 4.4), 5(5.1-5.3), 6(6.5).

Reference Books: 1. Fuzzy sets, theory and its applications by H. J. Zimmermann, 4th edition, Springer International edition (2010).

2. Fuzzy sets and their applications by Pundir. Pundir(Fourth Revised Edition 2012),Pragati Prakashan Educational Publishers.