PROF. NISHCHAL KUMAR VERMA
Department of Electrical Engineering
IIT Kanpur

TYPE OF COURSE : New | Elective | UG/PG
COURSE DURATION : 12 weeks (27 Jan' 20 - 17 Apr' 20)
EXAM DATE : 25 Apr 2020

PREREQUISITES : Nil
INTENDED AUDIENCE : UG, PG Students, industry professionals, researchers etc.

COURSE OUTLINE :
The course is designed to give a solid grounding of fundamental concepts of fuzzy logic and its applications. The level of the course is chosen to be such that all students aspiring to be a part of computational intelligence directly or indirectly in near future should get a foundation of these concepts through this course.

ABOUT INSTRUCTOR :
Prof. Nishchal K Verma (SM’13) is teaching in the Department of Electrical Engineering and Interdisciplinary Program in Cognitive Science, Indian Institute of Technology Kanpur, India. He obtained his PhD in Electrical Engineering from Indian Institute of Technology Delhi, India. He is an awardee of Devendra Shukla Young Faculty Research Fellowship by Indian Institute of Technology Kanpur, India for year 2013-16.

COURSE PLAN :
Week 1: Introduction and Fuzzy Sets Theory
Week 2: Membership Functions
Week 3: Set Theoretic Operations
Week 4: Fuzzy Arithmetic
Week 5: Fuzzy Relations
Week 6: Fuzzy Inference Systems I
Week 7: Fuzzy Inference Systems II
Week 8: Wang and Mendel Model
Week 9: TSK Model
Week 10: Fuzzifiers and Defuzzifiers
Week 11: ANFIS Architecture
Week 12: Fuzzy Systems and Machine Learning