

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. Bio-Medical Engineering

Semester: IV

Subject Code: 743101

Subject Name: **Intelligent Control Systems**

Sr.No	Course content
1	Introduction to intelligent control systems.
2	Foundations of Fuzzy Set Theory
3	Fuzzy Logic Theory
4	Fuzzy Linguistic Descriptions
5	Fuzzy Logic Controller
6	Mamdani Fuzzy Controller
7	Tsukamoto Fuzzy Controller
8	Takagi–Sugeno Fuzzy Controller
9	Implementation of the Fuzzy Logic Controllers
10	Implementation of the Fuzzy Logic Controllers Using the Intelligent Control Toolkit for LabVIEW
11	Introduction Artificial Neural Networks
12	Perceptron
13	Multi-layer Neural Network
14	Neuro-fuzzy Controller Theory
15	Neuro-fuzzy Controller
16	ANFIS: Adaptive Neuro-fuzzy Inference Systems
17	Genetic Algorithms and Genetic Programming

Reference Books:

1. Intelligent Control Systems with LabVIEW, Pedro Ponce-Cruz, Fernando D. Ramírez- Figueroa, Springer, 2009
2. Intelligent Autonomous Systems: Foundations and Applications, Dilip Kumar Pratihar, Springer, 2010
3. LabVIEW for engineers, Ronald W. Larsen, Prentice Hall/Pearson, 2010
4. LabVIEW based advanced instrumentation systems, S. Sumathi, P. Surekha, Springer, 2007