



### List of Experiments (Soft Computing Techniques Lab)

1. Programs on Matrix operations to understand the basic concepts of MatLab.
2. To print all the Continuous Discrete Membership Functions by using MatLab.
3. To perform different fuzzy operations on Membership Functions by using MatLab.
4. Design a Fuzzy controller for Air conditioning system/Washing Machine.
5. Identification of a system using Perceptron/Radial Base Function Network (RBFN).
6. Identification of a system by using Backpropagation algorithm.
7. Minimizing the objective function by using Genetic Algorithm (GA)
8. Minimizing the objective function by using Particle Swarm Optimization (PSO)
9. Minimizing the objective function by using Cuckoo Search Algorithm (CSA)
10. Minimizing the objective function by using Ant Colony Optimization (ACO)

11. Minimizing the objective function by using Differential Evolutionary (DE) algorithm
12. Minimizing the objective function by using Cat Swarm Optimization (CSO)

### **List of Experiments (Power System Lab)**

#### **MATLAB/SIMULINK Based Experiments**

1. Static Load Flow Analysis of Standard IEEE bus system using N-R method.
2. Dynamic Analysis of IEEE 9 bus System.
3. Small signal Stability Analysis of Single Machine Infinite Bus System.
4. Short circuit Analysis of IEEE 9 bus power system.

#### **DigSilent Power Factory Based Experiments-**

1. Modeling and Analysis of Low Voltage Distribution Network (Mesh and Radial).
2. Study of Relay Coordination and Time grading Calculation using PowerFactory.
3. Power Quality and Harmonics Analysis of Power System.
4. Modeling IEEE 8 bus power system and analyzing/creating different operation Scenarios using PowerFactory.
5. Transient stability & Voltage Stability Analysis of Standard Power System.
6. Contingency Analysis of standard Power System.

#### **List of Software**

1. DigSalient PowerFactory 2018
2. MatLab 2019b
3. LabView 2013

#### **Desktop Computer Details**

Total No of Computer- 27

Specification Intel Core i5-4590 CPU @3.30 GHz, RAM – 4GB,  
OS-64bit Microsoft Windows 10