ADVANCED COMPUTATIONS LAB

(Elective - 2)

II Semester

Course Code: 19CE2167	L	P	C
	0	3	1.5

Course Outcomes:

At the end of the course, the student will be able to:

CO1 Work on fuzzy-Logic for Concrete Properties

CO2 Create a ANN program for Soil Properties.

CO3 Create a Program for Highway Problems.

CO4 Compute future trip matrix using Programming.

CO5 Compute Trip Assignment / Modal Split of Transportation Problem Using Programing.

LIST OF EXPERIMENTS:

1. Fuzzy logic used for prediction of the compressive strength of concrete mix-design
2. ANN is used for prediction of maximum dry density (MDD) and unconfined compressive strength (UCS) of cement stabilized soil.
3. Genetic-algorithm-based multiobjective optimization model for the scheduling of linear construction projects (minimizing time and cost of the project)
4. fuzzy-logic-based system for selecting contractors
5. ANN applications in characterization of infrastructure materials focusing on portland cement concrete (PCC) and asphalt concrete (AC) materials.
6. Artificial Neural Network Approach for Pavement Maintenance
7. Assessment of highway slope failure using neural networks
8. Prediction of pavement performance through neuro-fuzzy reasoning
9. Forecast a future trip distribution matrix using Uniform Growth factor Method

10. Forecast a future trip distribution matrix using Average Growth factor Method
11. Forecast a future trip distribution matrix using Gravity Method
12. Solve trip assignment problem using Programming
13. Solve Modal Split problem using Programming

References:

1. Rajasekaran. S, Vijayalakshmi Pai. G.A, Neural Networks, Fuzzy System and Evolutionary Algorithm: Synthesis and Application, 2nd Edition, PHI Learning Private Limited, 2017.
2. Timothy J.Ross, Fuzzy Logic for Engineering Applications, 4th Edition, Wiley Publications, 2017.